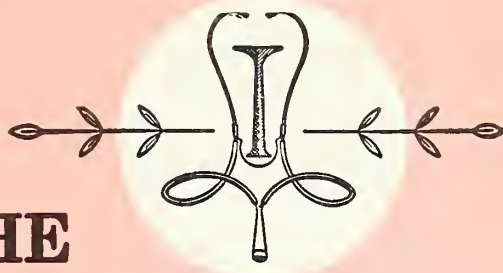




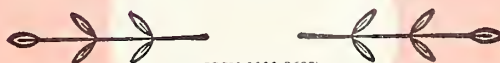
Digitized by the Internet Archive
in 2016

<https://archive.org/details/journalofkansasm80unse>



THE
Journal
OF THE
Kansas
Medical
Society

JANUARY
1979



(ISSN 0022-8699)

VOL. LXXX
NO. I

JAN 25 1979

U.C. SAN FRANCISCO

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for January

Scientific Articles

- Heart 70 — Brain 25: Hemodynamic Factors Determining the Medical Management of Angina — Jay W. Murphy, M.D., and Marvin Dunn, M.D., Kansas City, Kansas 11
- A Therapeutic Dilemma: Non-ruptured Subcapsular Liver Hematoma During Pregnancy and Puerperium — Erich W. Pollak, M.D., and Timothy A. Walker, M.D., Kansas City, Missouri, and Sacramento, California 15
- Paradoxical Embolism: The Shunt Detected by Non-invasive Method — Nirandon Wongsurawat, M.D.; R. David Holmsten, M.D., and Fe Villarante, M.D., Topeka 18
- Thrombectomy: Acutely Occluded Aorto-coronary Saphenous Vein Bypass Graft — A. Ghani, M.D., and John J. Turner, M.D., Youngstown, Ohio, and Shantikumar K. Gandhi, M.D., Topeka 20

Current Comment

- Bronchodilator Therapy — Mark S. Fixley, M.D., Kansas City, Kansas 22

Socio-Economics

- Chicken Tracks 26

Miscellaneous

- Advertisers 40
- Classified Advertisements 40
- Editorial Comment: *The Uncommon Code* 28
- Information for Authors 34
- Kansas Press Looks at Medicine 30
- Month in Washington 8
- Officers-Councilors 32
- President's Message 27
- Sugar and Disease 36

Copyright 1979, by the Kansas Medical Society. Indexed in "Hospital Literature Index," "Index Medicus." Available through University Microfilms. Listed in "CC/Clinical Practice."

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

The JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Second-class postage paid at Topeka, Kansas and at additional mailing offices. Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns. Printed by The Ovid Bell Press, Inc., Fulton, Missouri.

Would Incorporating your practice save you tax dollars?

Are you receiving full benefit from Pension and Profit Sharing/Tax Shelters?

Do you need a Keogh Plan with higher contribution limits?

Are you receiving Maximum Tax Benefits from fringe benefits?

Are you planning the most effective ways of reducing your Estate Asset Tax Liability?

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



John E. Lyons
MIDWEST PENSION PLANNERS

**Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913/235-5305**

THE MESSAGE OF TENSION

HEADACHES
SWEATS
TENSE, TAUT MUSCLES
HYPERVENTILATION
TACHYCARDIA
PALPITATIONS
BURNING IN STOMACH
FULLNESS
FREQUENCY

to relieve psychic tension
and its functional symptoms

VALIUM®
(diazepam) (V)

2-mg, 5-mg, 10-mg scored tablets

VALIUM® (diazepam)

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation, symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders, athetosis; stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma. may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-sedation.

Side Effects: Drowsiness, confusion, diplopia,

hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110



THE MENNINGER FOUNDATION

Continuing Medical Education

Partial Hospitalization: February 8-9, 1979. Directed by Larry Kennedy, M.D.

Leisure/Recreation and Mental Health: March 1-2, 1979. Directed by Ken Dugan.

Borderline and Narcissistic Disorders: March 3-10, 1979. Directed by Normund Wong, M.D. To be held in Vail, Colorado.

Helping People Retire: Growing into Fulfillment: March 22, 1979. Directed by Basil Cole.

Mental Retardation—featuring Dr. George Tarjan: April 19-20, 1979.

CME Credit Available.

For further information contact June Housholder, Division of Continuing Education, The Menninger Foundation, P.O. Box 829, Topeka, Kansas 66601. 913/234-9566, ext. 3685.

SERVING YOU IN KANSAS

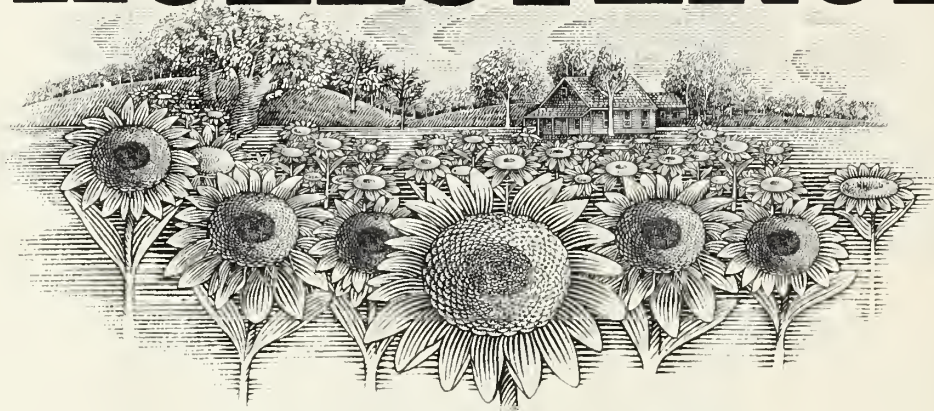


501 Gage
P.O. Box 399
Topeka, Kansas 66601
913/272-2300

2959 S. Spruce
Wichita, Ks 67216
316-522-8111

9202 Barton
Overland Park, Ks 66214
913-492-5820

GIVE THEM A TOUGH NEW DEFENSE AGAINST CHOLESTEROL.



New Sunflower FarmsTM Margarine.

A light, delicious
margarine containing
pure Sunflower oil.
So high in polyun-
saturates, it can be
more beneficial for
patients following a
total fat modified diet.

No cholesterol.
Higher in polyunsaturates
than any corn oil margarine.



In pharyngitis and tonsillitis

...prompt temporary relief
of pain even before
patients leave
your office.

CĒPASTAT[®]

mouthwash/gargle/sore
throat lozenges

Merrell

Proven Anesthetic Effectiveness

Spraying the throat with CĒPASTAT brings soothing relief within minutes. Your patients will appreciate this relief while waiting for therapeutic measures to take hold. The well-established anesthetic effects of CĒPASTAT provide soothing temporary anesthesia to the irritated or inflamed oropharyngeal mucosa.

CĒPASTAT in your treatment room . . .

Used as a spray, CĒPASTAT is more likely to deliver the most relief to the painful area of the throat.

Suit the product to the patient . . .

The liquid is best for use at home as a spray or gargle. Lozenges are ideal for patients on the go.

A recommendation is best . . .

It costs less. Keeps the emphasis where you want it . . . on more important counter-measures — your prescription for anti-infectives, for example.

MERRELL NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215



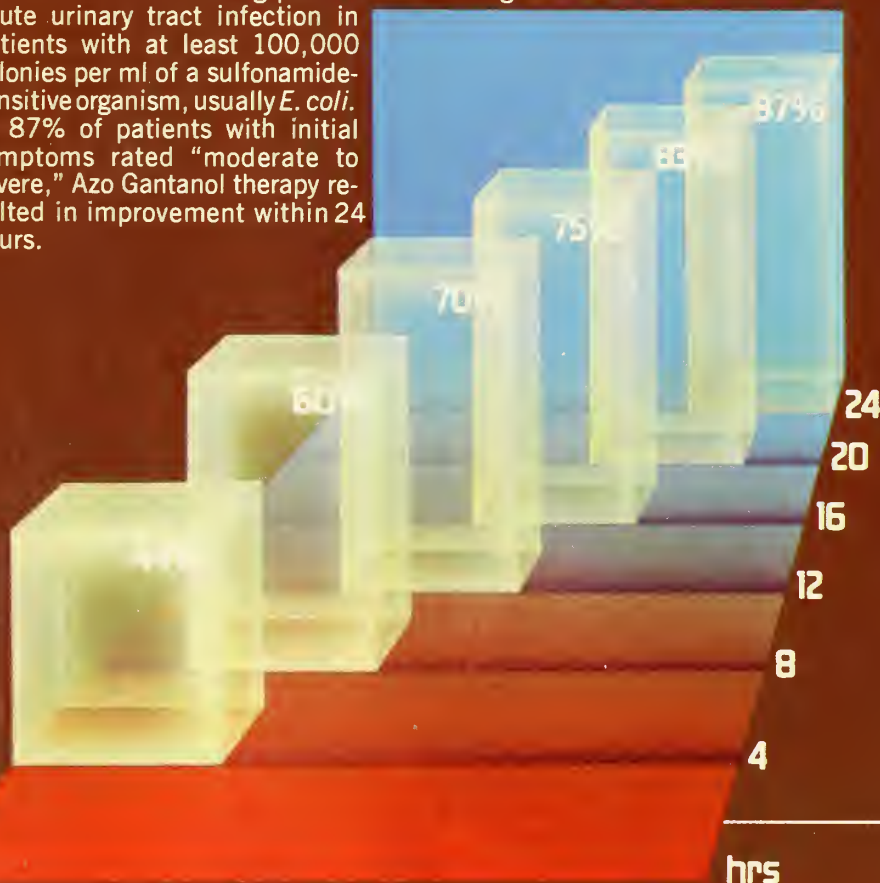
relief of minor
sore throat when
patients want it . .

stat

Important data on the pain of acute cystitis:

In 87% of patients studied (303 of 349), Azo Gantanol® reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli*. In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Before prescribing, please consult complete product information, a summary of which follows:
Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note:** Fully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; aminobenzoic acid to follow-up culture media; increasing frequency of resistant organisms limit the usefulness of antibacterials including sulfonamides. Measure sulfonamide blood levels; variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pain, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxemia, nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute painful phase of urinary tract infections. **Usual adult dosage:** 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.



Roche Laboratories
 Division of Hoffmann-La Roche
 Nutley, New Jersey 07110

Fast pain relief plus effective antibacterial action

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for
the pain

for
the pathogens

Accept no substitute for your professional judgment

As a physician, you have the right to prescribe the drug which you believe will most benefit your patients. Now, substitution laws make it more difficult to exercise that right. In many states, unless you specifically direct pharmacists to dispense your brand-name prescription as written, they may be required by law to substitute another drug for your brand-name prescription.

This means that the ultimate drug selection is no longer yours; its source is left to the pharmacist's discretion. You will have forfeited your right to prescribe as you see fit. Preserve your rights. Specify that you will accept no substitution.

When you accept no substitutes...

- You ensure that your patient receives exactly that product you have specified on your prescription
- You choose the quality of the product dispensed to your patient
- You can exercise the right to select a product based upon its proven therapeutic performance and to select a manufacturer that stands behind its brand name or generic product
- You can support the kinds of research programs that are vital to new drug discovery and development
- You can help sustain important physician, pharmacist and patient education services supported by innovative, research-oriented firms

For complete information on the drug substitution law effective in your state, please consult your local Pfizer Representative.

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

TEST	CODE	PRICE	UNIT
CLINICAL CHEMISTRY			
GLUCOSE	8.1.1.1	1.00	each
CHOLESTEROL	8.1.1.2	1.00	each
TRIGLYCERIDES	8.1.1.3	1.00	each
HEMATOLOGY			
HEMOCYTOMETRY	8.2.1.1	1.00	each
DIFFERENTIAL	8.2.1.2	1.00	each
SMEAR PREP	8.2.1.3	1.00	each
COAGULATION			
PT	8.3.1.1	1.00	each
APTT	8.3.1.2	1.00	each
IMMUNOLOGY			
RA	8.4.1.1	1.00	each
RF	8.4.1.2	1.00	each
ANTIBODY TITERS	8.4.1.3	1.00	each
IMMUNOFLUORESCENCE	8.4.1.4	1.00	each
IMMUNOELECTROPHORESIS	8.4.1.5	1.00	each

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

**THE LATTIMORE-FINK
LABORATORIES, INC.**
A DAMON LABORATORY

115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621

★
Specialized Service

IN
PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction

**THE
MEDICAL PROTECTIVE COMPANY**
FORT WAYNE, INDIANA

Professional Protection Exclusively since 1899

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-B, 6600 West 95th Street, Overland Park, Kansas 66212

Telephone: (Area Code 913) 381-4222

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

**IN KANSAS
YOUR INDEPENDENT AUTHORIZED DEALERS ARE:**

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Euporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street • Chicago, Illinois 60646

An American Company

Month in Washington

Stringent controls and across-the-board budget cuts will be the order of the day for the coming 96th Congress. President Carter has announced that his anti-inflation program will be the top domestic priority and such sentiment appears to be widespread among returning members.

The Administration's initial thrust in the health area will be its demand for the hospital cost containment program that was blocked in the last Congress. In addition, it is expected that the President's chief selling point for his brand of national health insurance (NHI) will be its alleged ability to hold down inflation in the health care sector.

In an important policy address before the National Press Club, Joseph A. Califano, Secretary of the Health, Education and Welfare Department, warned that if liberals want federal social programs to survive, they must concentrate on better management of those programs rather than on their expansion.

"It was the challenge of Liberalism in the Sixties to enact long-delayed and much-needed social programs," Califano said. "It is the challenge for Liberalism in the Seventies to manage these programs well."

"As we come to the close of the Seventies, the challenge for the American Liberal is the challenge of austerity," Califano said.

There is a management revolution underway in Washington, the HEW Secretary said, an "effort to make compassionate programs work efficiently."

He said it is essential for Liberals to recognize that times have changed, that "the self-confidence of the Sixties has been replaced by a mood of caution, wariness, and skepticism."

Califano didn't say where the economic ax will fall at HEW except to note some long-standing targets such as impacted federal aid for schools and the hospital cost containment plan. Of the latter, he said House Speaker Thomas O'Neill (D-Mass.) has promised early House action next year. "We will drive that legislation through next year," he said.

Government health planners are considering a "productivity standards" system to examine the efficiency of physicians and hospitals. HEW Secretary Califano said such standards could cut unnecessary surgery, make better use of expensive machinery and shorten hospital stays.

"I recognize that we must proceed with great care in attempting to set standards regarding health care productivity," he said. Any such move should not

infringe on physicians' relationships with patients, he said. The National Health Planning Council was asked to begin "careful consideration of the issues raised by productivity standards."

Califano did not go into detail about minimum productivity standards in a speech at the annual meeting of the Institute of Medicine, a branch of the National Academy of Sciences. "A concern with productivity presumes a strong doctor-patient relationship characterized by human caring," he said, noting that physicians, economists, professional standards groups, hospitals, nursing homes, and other medical facilities would contribute to the set of standards.

With the "moonshot age" of complex medical technology and refined special skills have come the problems of unnecessary medical procedures and a proliferation of facilities which are underutilized, said Califano. He noted that in 1975, there were more than three hospital workers/patient in this country while the ratio in West Germany was 1:1 and 2:1 in Great Britain.

According to the Secretary, nurse practitioners and physician assistants "could handle more than 50 per cent of patient visits for primary care problems more economically — at least in certain settings — than doctors."

A broad-based coalition of health and environmental groups aimed at disease prevention was proposed by Rep. Paul Rogers (D-Fla.) who declared he's convinced the coalition will perform a valuable role in informing the public.

The tentatively-titled National Coalition for Disease Prevention and Environmental Health held its first strategy and organizational meeting in Washington, D. C. with 30 groups forming an organizing committee. Rogers told representatives of these and other groups that he intended to play an active role in supporting the Coalition, but he apparently will not head it. Rogers, retiring as head of the House Commerce Health Subcommittee, said he would announce his future private role shortly, but would serve the Coalition "for free."

Some 140 national groups have expressed an interest in joining the group, according to Rogers. The educational and information exchange functions of the Coalition will be critical, he said. The organized groups would survey food, the safety of consumer products, the purity of air and water, the safety of the work place, and strive for a "less stressful society."

President Carter has vetoed legislation to extend federal aid for nurses' education for two years with a
(Continued on page 40)



Dyazide[®]

Each capsule contains 50 mg. of Dyrenium[®] (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Makes Sense in Hypertension*

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

*** Warning**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spiro-lactone is used concomitantly, determine serum K⁺ frequently; both can cause K⁺ retention and elevated serum K⁺. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
a SmithKline company

Carolina, P.R. 00630

**When painful spasm
is the presenting
symptom...**



in functional G.I. disorders*

Bentyl®

(dicyclomine hydrochloride USP)

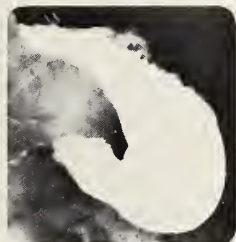
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating certain functional G.I. disorders.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl®

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection
AVAILABLE ONLY ON PRESCRIPTION.

Brief Summary
INDICATIONS

For use as adjunctive therapy in the treatment of peptic ulcer. IT SHOULD BE NOTED AT THIS POINT IN TIME THAT THERE IS A LACK OF CONCURRENCE AS TO THE VALUE OF ANTICHOLINERGICS/ANTISPASMODICS IN THE TREATMENT OF GASTRIC ULCER. IT HAS NOT BEEN SHOWN CONCLUSIVELY WHETHER ANTICHOLINERGIC/ANTISPASMODIC DRUGS AID IN THE HEALING OF A PEPTIC ULCER, DECREASE THE RATE OF RECURRENCES, OR PREVENT COMPLICATION.

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

May also be useful in the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis, acute enterocolitis, and functional gastrointestinal disorders); and in neurogenic bowel disturbances (including the splenic flexure syndrome and neurogenic colon).

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup)

Final classification of the less-than-effective indications requires further investigation

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis, toxic megacolon complicating ulcerative colitis, myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with autonomic neuropathy, hepatic or renal disease, ulcerative colitis—Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon, hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension; hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

It should be noted that the use of anticholinergic/antispasmodic drugs in the treatment of gastric ulcer may produce a delay in gastric emptying time and may complicate such therapy (antral stasis). Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention; blurred vision and tachycardia, palpitations; mydriasis; cycloplegia, increased ocular tension, loss of taste; headache; nervousness, drowsiness; weakness; dizziness; insomnia; nausea, vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons, and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg capsule and syrup: Adults 1 or 2 capsules or teaspoonfuls syrup three or four times daily. Children 1 capsule or teaspoonful syrup three or four times daily. Infants ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg: Adults 1 tablet three or four times daily. Bentyl Injection: Adults 2 ml (20 mg) every four to six hours intramuscularly only. NOT FOR INTRAVENOUS USE. **MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanecol chloride USP) should be used.

Product Information as of October, 1976

Merrell

MERRELL NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215 U.S.A.

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.

1009 McGee St.

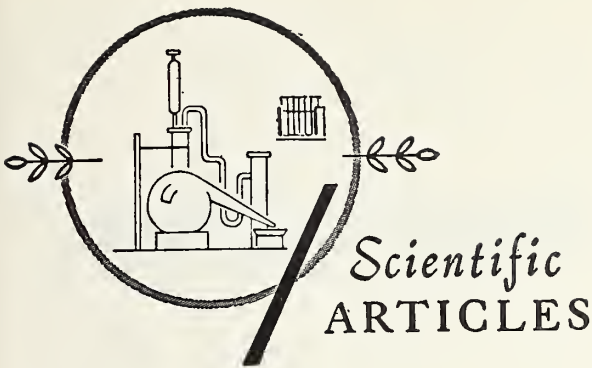
VI 2-4750

KANSAS CITY, MO.

Buy

U.S. Savings

Bonds



Heart 70 — Brain 25

Hemodynamic Factors Determining the Medical Management of Angina

JAY W. MURPHY, M.D. and MARVIN DUNN, M.D., Kansas City, Kansas

REVIEW OF FACTORS that determine myocardial oxygen requirement and coronary blood flow is important in establishing a rational approach to the medical treatment of angina pectoris. Aortocoronary bypass is the primary method of increasing coronary blood flow.¹ Medical therapy does little to enhance coronary flow, but can significantly reduce myocardial oxygen requirement. It is through alteration of this latter mechanism that most patients obtain relief from angina.

The heart is unique among all organs in the body because of its extreme avidity and need for oxygen.² Figure 1 shows the approximate oxygen extraction of various tissues in the body. Skeletal muscle extracts about 25 per cent of the oxygen supplied by the arterial blood and has the capacity to increase its oxygen extraction during exercise to 80-90 per cent. Cardiac muscle extracts 70 per cent of the arterial oxygen on a single passage when the heart is quietly beating and — in contrast to skeletal muscle — there is only a minimal increase in oxygen extraction during exercise. As a result, the only effective way of increasing oxygen delivery to the myocardium is by increasing coronary blood flow. Thus, the heart is completely dependent upon increased coronary blood flow to supply the oxygen needed to maintain

Medical therapy prescribed for patients with angina should be directed toward alteration of conditions that determine myocardial oxygen consumption. Factors conducive to hemodynamic adequacy facilitate coronary blood flow thus decreasing resistance to efficient myocardial perfusion.

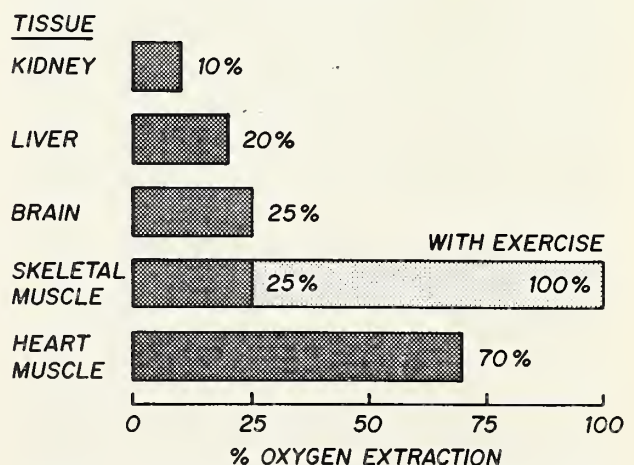
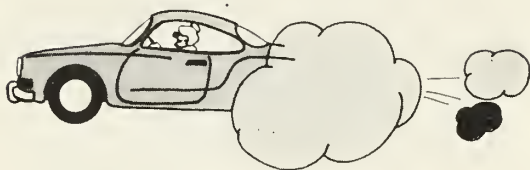


Figure 1. Oxygen extraction of various body tissues. Although skeletal muscle extracts only about 25 per cent of the delivered oxygen, it has the capacity of increasing its oxygen extraction to 80-90 per cent with exercise. The heart muscle extracts 70 per cent of the oxygen in the resting state.

Address reprint requests to Dr. Dunn, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

INSUFFICIENT AIR IN CARBURETOR



INCOMPLETE COMBUSTION

Figure 2. An inefficient engine which uses an excessive amount of gasoline is similar to the inotropic state of the myocardium.

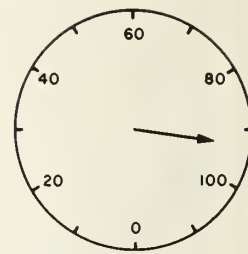
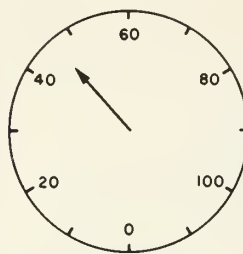
adequate tissue oxygenation. If the coronary circulation is obstructed due to coronary arteriosclerosis, coronary flow and myocardial oxygenation cannot be significantly increased in response to an exercise challenge. Because medical therapy cannot significantly increase coronary flow but can decrease myocardial oxygen requirement, it is important to review the factors that determine myocardial oxygen requirement.³

Myocardial Oxygen Requirement

There are four important factors that determine myocardial oxygen requirement.⁴ The most important of these is the inotropic state of the myocardium or myocardial contractility. This is a term that describes the force of contraction of the myocardial cells as influenced by circulating and cellular catecholamines. From a quantitative point of view, this is probably the most important factor and accounts for 70 per cent of the myocardial oxygen requirement.

A second factor determining myocardial oxygen requirement is the heart rate; the more rapid the rate, the greater the myocardial oxygen requirement.

The third factor is cardiac size. The larger the diameter of the heart, the greater the wall tension required to maintain the myocardial size and shape, and the greater the oxygen requirement. The volume measured at the end of diastole is the greatest and is referred to as end-diastolic volume. The end-diastolic pressure usually rises as the volume increases. The end-diastolic volume and pressure are referred to as the preload of the heart or the tension



THE FASTER THE SPEED THE GREATER THE FUEL CONSUMPTION

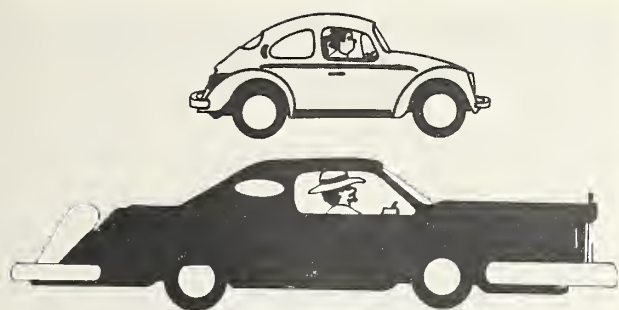
Figure 3. The greater the speed of an automobile, the greater the gasoline consumption. Similarly, the greater the speed of the heart, the greater the oxygen consumption.

on the heart wall immediately prior to ventricular contraction.

The final factor controlling myocardial oxygen consumption is the resistance that the ventricle must overcome in order to eject its diastolic volume. If a patient does not have aortic stenosis, this is directly related to the aortic systolic blood pressure. This has frequently been referred to as the afterload or the resistance that has to be overcome in order to eject blood from the ventricle. These four factors (contractility, rate, volume, pressure) determine the myocardial oxygen requirement.

Because the oxygen delivered to the myocardium is closely tied to coronary blood flow, any impairment of coronary flow represents an energy crisis for the myocardium, just as the paucity of gasoline represents an energy crisis for the automobile. In fact, the myocardial oxygen requirement can be related to the same factors that determine the amount of gasoline an automobile utilizes. For example, the inotropic state of the heart can be compared to the tuning of the carburetor and the efficiency of the gasoline engine (*Figure 2*). An automobile engine with worn rings, poor lubrication, bad spark plugs, and a poorly adjusted carburetor will require considerably more gasoline than an engine with excellent rings, good lubrication, new spark plugs, and a properly adjusted carburetor. These factors represent the inotropic state of the myocardium.

The faster an automobile is driven, the more gasoline it requires (driving at 55 mph utilizes less gasoline per mile than driving 75 mph). Similarly,



THE BIGGER THE CAR THE GREATER THE FUEL CONSUMPTION

Figure 4. The larger the size of the automobile, the greater the fuel consumption. Similarly, the larger the heart, the larger the oxygen consumption.

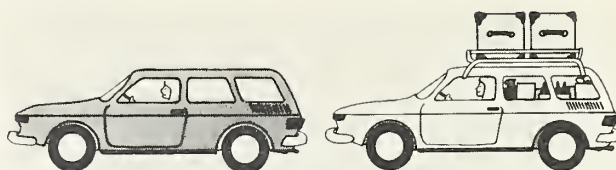
the faster the heart beats, the more oxygen it requires. If we wish to save gasoline, we must drive the automobile at the speed at which the best gas utilization can be achieved. In a similar fashion, if we wish to reduce the myocardial oxygen requirement, we should attempt to maintain the heart rate at the minimum for the work required (*Figure 3*).

The larger an automobile, the more gasoline it requires. A smaller car is more efficient. Similarly, a very large heart utilizes more oxygen and a smaller heart utilizes less oxygen to produce the same amount of useful work (*Figure 4*). Therefore, when possible, an attempt should be made to reduce cardiac size. This is called preload reduction.

Finally, if we load an automobile with excessive weight (luggage, a large number of passengers, a cooler full of ice), it will use more gasoline than one that is carrying only the driver (*Figure 5*). Just as reducing the weight of the car reduces gasoline consumption, reducing the resistance to flow (systolic pressure) reduces myocardial oxygen requirement. This is called afterload reduction. All of these factors must be considered before appropriate therapy for angina is undertaken.

Hemodynamic Factors

Under normal circumstances, the myocardial oxygen requirement is satisfied by increasing coronary blood flow. The increase in coronary blood flow occurs because of an increase in perfusion gradient, increased coronary vasodilatation, and de-



THE GREATER THE LOAD THE GREATER THE FUEL CONSUMPTION

Figure 5. Increasing the load of an automobile will increase the fuel consumption. Similarly, increasing the systolic pressure will require an increase in oxygen consumption.

creased myocardial resistance. A host of hormonal and chemical factors interplay in order to increase the perfusion gradient, dilate the coronary artery bed, and decrease the myocardial resistance.⁵

Some of these hemodynamic factors are illustrated in *Figure 6*. About 95 per cent of coronary flow occurs during diastole. Therefore, myocardial perfusion is maintained by the pressure differential between the aortic diastolic pressure and the total resistances between the root of the aorta and the right atrium. If there is no coronary artery disease, these resistances are due to the resistance of flow through the myocardium and the resistance in the right atrium. The myocardial resistance is usually about 10 mm Hg, and the right atrial resistance about 10 mm Hg. Since the diastolic pressure is usually about 80 mm Hg, the coronary perfusion pressure is approximately 60 mm Hg [$80 - (10 + 10)$].

If a high grade coronary lesion develops, it produces an additional resistance to blood flow through the coronary bed so that the coronary perfusion pressure can be reduced to 35 mm Hg or less, depending upon the magnitude of the lesion. Usually a lesion must produce a 70 per cent obstruction before there is a significant reduction in perfusion pressure. Under these circumstances, lowering the aortic diastolic pressure may be detrimental because it will result in a further decrease in coronary perfusion (*Figure 7*).

Resistance to coronary flow can occur within the myocardium when the diastolic wall tension increases. This occurs in cardiogenic shock and heart failure. Increases in right atrial pressure that occur in right heart failure also increase resistance to blood flow.

Summary

Myocardial oxygen consumption is determined by

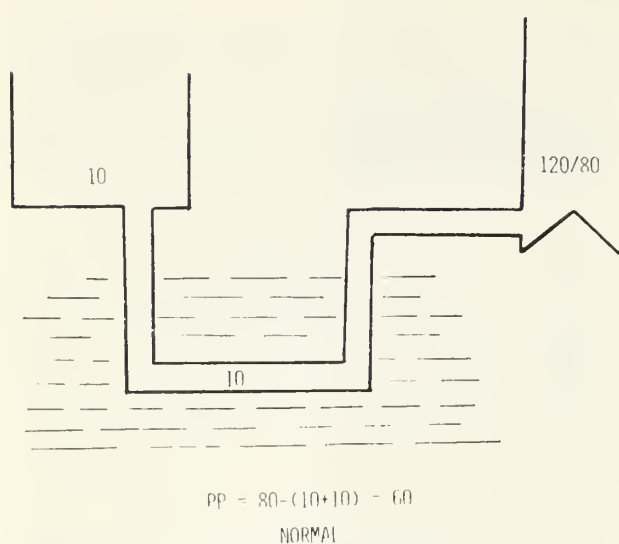


Figure 6. The hemodynamic factors necessary for myocardial perfusion by the coronary arteries: the aorta (right) has a blood pressure of 120/80. The coronary artery (conduit) has both an epicardial and intramyocardial section. The resistance to coronary blood flow of the intramyocardial segment is 10 mm Hg. The right atrium (left) adds an additional 10 mm Hg resistance to coronary blood flow.

the inotropic state of the myocardium, heart rate, diastolic volume of the left ventricle, and the systolic pressure in the aorta. Any medical therapy that is prescribed for patients with angina should be directed toward altering these factors by decreasing the inotropic state, heart size, aortic systolic pressure, and heart rate. Cognizance must be taken of the hemodynamic factors that maintain coronary blood flow. The diastolic pressure in the aorta provides the perfusion pressure of the myocardium. The myocardial resistance and the right atrial pressure represent resistances to efficient myocardial perfusion. Therefore, factors that decrease the right atrial pressure, decrease the myocardial resistance and maintain diastolic pressure in the aorta, will have salutary effects on coronary blood flow.

References

1. John, W. D. *et al.*: Extended treatment of severe coronary artery disease: A total surgical approach. *Ann. Surg.* 170:460-470, 1969.
2. Gorlin, R.: Pathophysiology of cardiac pain. *Circulation* 32:135-148, 1965.
3. Harrison, T. R. and Reeves, T. J.: *Principles and Problems of Ischemic Heart Disease*. Year Book Medical Publishers, Inc., 1968.
4. Sonnenblick, E. H.; Ross, J. and Braunwald, E.: Oxygen consumption of the heart: Newer concepts of its multifactorial determination. *Am. J. Cardiol.* 22:328-336, 1968.

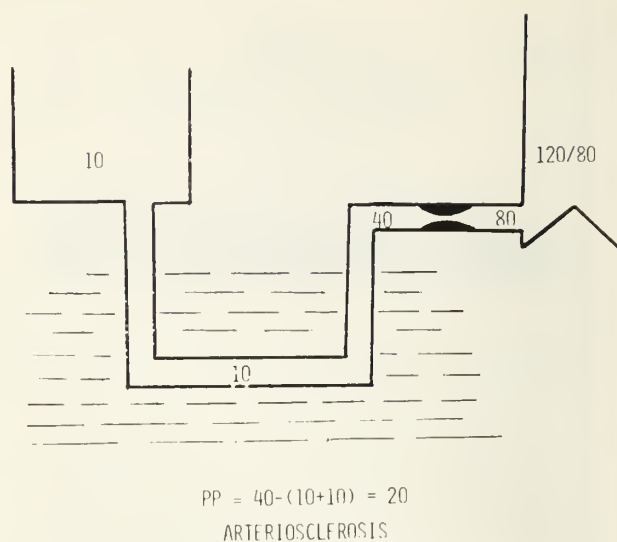


Figure 7. The effect of a significant arteriosclerotic lesion on myocardial perfusion. In addition to the resistances in the normal coronary artery, an obstruction in the epicardial segment of the coronary artery results in an added resistance to coronary blood flow and a reduction in perfusion pressure.

5. Elliott, W. C. and Gorlin, R.: The coronary circulation, myocardial ischemia, and angina pectoris. *Mod. Concepts Cardiovasc. Dis.* 35:111-122, 1966.

Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

A Therapeutic Dilemma

Non-Ruptured Subcapsular Liver Hematoma During Pregnancy and Puerperium

ERICH W. POLLAK, M.D. and TIMOTHY A. WALKER, M.D.,
Kansas City, Missouri, and Sacramento, California

INTRAPERITONEAL RUPTURE of subcapsular liver hematoma occurring during pregnancy and puerperium, although a rare complication, has been reported often enough to prove that survival is impossible without prompt recognition and surgical treatment.¹

Conversely, incidence and natural history of non-ruptured liver hematoma during pregnancy and puerperium have not been adequately documented in the medical literature, and no statistical data to support either operative or non-operative management were available. Recent newer and less invasive diagnostic methods implied the possibility of preoperative detection of these lesions, previously noticed only at autopsy or at operation for massive bleeding. This early recognition led to an up-to-now unresolved therapeutic dilemma, as shown by the case of the patient presented below.

Case Report

A 24-year-old female — seven months pregnant and with a history of preeclampsia during a prior pregnancy — was admitted for evaluation and treatment of cephalalgia, dizziness, leg swelling, and a ten-pound weight gain over a three-week period.

Initial physical examination disclosed rectal temperature, 37.8 C; pulse, 108 beats/min; 24 respirations/min; arterial pressure, 140/110 mm Hg. Significant abdominal findings included generalized distention, diffuse tenderness, especially in the right upper abdominal quadrant, and hypoactive bowel sounds. The uterine fundus could be palpated 4 cm above the umbilicus. No masses or other enlarged abdominal organs were detected. There was 2+ pitting edema at both ankles. Relevant laboratory findings included: hematocrit, 29.2% (down from 38.4% eight days earlier); total serum proteins, 5 gm/100 ml; serum albumin, 2.4 gm/100 ml; SGPT 1816 units; serum sodium, 129 mg/100 ml. Serum

contents of other electrolytes, bilirubin, creatinine, and BUN were within normal range. Results of partial thromboplastin time, prothrombin time, and DIC panel were also within normal limits. Chest x-ray showed a moderate right pleural effusion.

Unavailability of data regarding management of non-ruptured liver hematoma during pregnancy led to a therapeutic dilemma when such a lesion was first recognized with non-invasive methods in a preeclamptic patient. Although hematoma rupture did not occur, operation was performed because of persistent fever, pain, and deteriorating liver function. Unroofing, evacuation, and drainage of hematoma led to rapid clinical improvement. Until more is known about the natural history of the disease, operation is possibly the safest approach for pregnant or puerperal women with liver hematoma to avoid morbidity and mortality from abscess formation, hemobilia, and cataclysmic intraperitoneal rupture.

With diagnosis of preeclampsia, the patient was treated with bedrest, tranquilizers, analgesics, diuretics, and two units of packed red blood cell transfusion without clinical improvement. Hyperpyrexia, tachycardia, further increase of arterial blood pressure to 160/112 mm Hg, and transient renal shutdown occurred within 48 hours of admission. Emergency Caesarean section was performed and a male fetus was delivered who did not survive. The overall thickness of the placenta was decreased, there were many areas of placental infarction and histologically, hyalinization and focal calcification of villi. There was no evidence of acute or chronic inflammation in the placenta. Postoperatively, while renal function improved, tachycardia and arterial hypertension (170/110 mm Hg) persisted, rectal temperature rose to 38.9 C, and abdominal pain in

Address reprint requests to Dr. Pollak, Department of Surgery, University of Missouri School of Medicine, 2301 Holmes Street, Kansas City, MO 64108.

the right-upper quadrant increased in intensity. Laboratory test results showed a total bilirubin, 5.8 mgm/100 ml; LDH, 2000 units; alkaline phosphatase, 860 units; SGOT, 369 units; albumin, 2.5 gm/100 ml; total proteins, 4.8 gm/100 ml. The persistent right pleural effusion was evacuated twice over an eight-day period and recurred each time. Sterile serosanguinous fluid was obtained by thoracentesis. Pleural biopsy performed concomitantly showed only an admixture of histiocytes, polymorphonuclear leukocytes, and lymphocytes. No malignant cells or evidence of granulomatous disease were encountered. Ventilation and perfusion lung scan results were consistent with the presence of pleural effusion only. Abdominal echogram showed a very large, poorly margined subphrenic and perihepatic fluid collection, consistent with an abscess. Liver-spleen radioisotope scans (Gallium scan, Technetium-99m sulfur-colloid scan) showed a large concave defect in the right lateral aspect of the liver, believed to be caused either by a liver abscess or hematoma.

Because of the persistent symptoms, signs and laboratory findings suggesting a subcapsular hematoma of the liver and the impossibility of ruling out a liver abscess, the abdomen was surgically explored 10 days after admission. A mass 15 cm in diameter, loosely attached to the diaphragm, was found on the superior aspect of the right liver lobe. Adhesions between the liver mass and the diaphragm were taken down. Needle aspiration of the mass was performed. Direct bacteriological investigation and subsequent culture of the aspirate disclosed no bacterial growth. The mass itself was a partially organized hematoma of the liver. The hematoma was unroofed and then evacuated by blunt dissection. There was no bleeding. Drainage of the residual cavity was accomplished with a soft latex drain. Histological findings corroborated the presence of partially organized clotted blood with proliferating fibroblasts and neo-capillaries. No neoplastic tissues, adenoma, or regenerative hepatic tissue were found. Wedge biopsy of a distant sector of the liver showed intact parenchymal structure, with several focal areas of hemorrhage. The hepatocytes had somewhat enlarged and irregular nuclei and prominent nucleoli. There were some binucleated parenchymal cells. There were no mitosis, areas of necrosis, or bile stasis.

Postoperative recovery was satisfactory. The patient was discharged eight days after operation, and then periodically monitored. One month after operation she was free of symptoms, her operative wound

was healed, and laboratory tests were all within normal limits.

Comments

The true incidence of non-ruptured subcapsular hepatic hematoma in pregnant women is not known; consequently, little can be said about the natural history and the real incidence of complications. Rupture of subcapsular hepatic hematomas has been reported in over 95 instances,¹⁻¹⁰ usually occurring during the third trimester of pregnancy, in eclamptic or preeclamptic patients.¹¹ Outcome for the mother was uniformly fatal unless surgery was performed promptly.¹² About 50 per cent of operated patients survived.¹³ Exsanguination was the most frequent cause of death in all operated or non-operated patients. Overall perinatal mortality was 77 per cent.¹⁴

Etiopathogenesis of subcapsular hematomata in pregnant women is not completely understood. Prolonged vasospasm in the liver secondary to increased reactivity to vasopressors (angiotensin and norepinephrine) during pregnancy has been alleged. Elevated circulating levels of angiotensin and norepinephrine leading to decreased hepatic blood flow and decreased hepatic oxygen consumption¹¹ have been detected in eclamptic patients. Disseminated intravascular coagulation, parenchymal ischemia, and secondary hemorrhage due to thromboplastic substances produced by the eclamptic placenta were also suspected as a cause for liver hematoma in eclamptic patients. Moreover, spontaneous bleeding in other organs (brain, subarachnoid space, kidneys, placenta, adrenals, and retroperitoneum) has been reported during eclampsia suggesting a general cause acting upon diverse organs of the eclamptic patient.¹⁵ Direct trauma to the liver has been repeatedly suggested as a local predisposing factor.¹⁶ Relatively minor trauma acting upon a softened and congested liver during gestation could explain subcapsular bleeding.¹⁷ Even very slight trauma, unrecognized to the patient,¹⁸ could be injurious in eclamptic patients. Moreover, vomiting, labor, or eclamptic convulsions could result in enough increase of the intra-abdominal pressure to explain cause for a liver hematoma and subsequent hematoma rupture.¹⁹

Placental changes (specifically focal infarction and degeneration), hepatic histological changes, and functional renal changes found in this patient indicated a generalized vascular disorder as a unified cause for her anatomic findings and symptoms. No evidence of external trauma was found and a search for other causes for liver hematoma — such as

periarteritis nodosa, multiple liver aneurysms, syphilis, malaria, typhoid fever, amebic abscess, or anaphylactic reaction — was negative. Histological examination also failed to show evidence of hepatic adenoma or malignancy.

Autopsy findings in fatal exsanguinating rupture of liver hematoma show capillary dilatation, thrombosis and hemorrhage in the periportal spaces, swelling of hepatocytes, foci of fatty degeneration, and lobular necrosis.²⁰ Reports of histological findings in livers of survivors were scarce. In our patient, the parenchymal structure was relatively intact although several areas of hemorrhage could be seen. The absence of major parenchymal changes explained the prompt recovery of the patient, and contrasted with the intense liver functional deficit.

In this patient, clinical findings and results of the radionuclide scans were consistent with a non-ruptured subcapsular hematoma of the liver, while increasing pain, fever, tachycardia, hepatic function changes, and the recurring pleural effusion suggested the possibility of abscess formation. Operation was performed because a liver abscess could not be ruled out. When only an organizing hematoma was found, debridement and drainage were performed as prophylactic measures against rebleeding, intraperitoneal rupture, infection, further parenchymal necrosis, and hemobilia. The operation marked the turning point in the clinical evolution of this patient toward a favorable outcome, indicating that the therapeutic approach was probably correct. A more conservative action could have ultimately led to a favorable outcome, because spontaneous resolution is a theoretical possibility for non-ruptured subcapsular liver hematomas; however, such evolution in pregnant or puerperal patients has not been documented in medical literature. Increased availability of radionuclide liver scan could contribute to documentation of such evolution in the future, thus providing a rationale for non-operative treatment in similar cases. In the meantime, the favorable results obtained with operative debridement and drainage, the unacceptable mortality of ruptured hematomata in preeclamptic women, and the high incidence of complications of traumatic liver hematomata in non-pregnant patients indicate that such operative treatment should be considered the treatment of choice.

References

1. Bis, K. A. and Waxman, B.: Rupture of the liver associated with pregnancy: A review of the literature and report of two cases. *Obstet. Gynecol. Surv.* 31:763-777, 1976.

2. Bellwood, K. B.: A fatal case of eclampsia. *St. Barth. Hosp. J.* 22:154-155, 1915.
3. Ayars, T. R.; Ohum, A. E. and Carlinghouse, R. E.: Pregnancy with spontaneous subcapsular hematoma. *Bull. St. Louis Med. Soc.* 25:311-312, 1937.
4. Notelovitz, M. and Chrichton, D.: Spontaneous rupture of liver in pregnancy. *S. Afr. J. Med. Sci.* 42:476-480, 1968.
5. Owen, A. and Kandalaft, F.: Spontaneous subcapsular hematoma and rupture of the liver during pregnancy. *Br. J. Obstet. Gynaecol.* 80:852-853, 1973.
6. Touloukian, R. J. and Ferrer, J. M.: Spontaneous rupture of liver during pregnancy. *Am. J. Obstet. Gynecol.* 80:155-160, 1960.
7. Yen, S. C.: Spontaneous rupture of liver during pregnancy. *Obstet. Gynecol.* 23:783-787, 1964.
8. Kranush, D.; Auer, E. S. and Reckler, S. M.: Spontaneous rupture of the liver during pregnancy: Review of the literature with case reports. *Obstet. Gynecol.* 4:21-28, 1957.
9. Rademaker, L.: Spontaneous rupture of the liver complicating pregnancy. *Am. Surg.* 118:396-401, 1943.
10. Call, A. and Lorentzen, D.: Rupture of liver in pregnancy. *Obstet. Gynecol.* 25:466-469, 1965.
11. Castaneda, J.; Garcia-Romero, J. and Canto, M.: Hepatic hemorrhage in toxemia of pregnancy. *Am. J. Obstet. Gynecol.* 107:578-584, 1970.
12. Utley, J. R.: Spontaneous rupture of the liver during pregnancy. *Surg. Gynecol. Obstet.* 133:250-252, 1971.
13. Browne, C. H. et al.: Rupture of subcapsular hematoma of the liver in a case of eclampsia. *Br. J. Surg.* 62:237-238, 1975.
14. Severno, L. J.; Freedman, W. L. and Mahesk Kumar, A. P.: Spontaneous subcapsular hematoma of liver during pregnancy. *NY State J. Med.* 70:2818-2821, 1970.
15. Speert, H. and Tillman, A. J. B.: Rupture of the liver in pregnancy. *Am. J. Obstet. Gynecol.* 63:1127-1130, 1952.
16. Abercrombie, J.: Case of hemorrhage of the liver. *Lond. Med. Gaz.* 34:792-794, 1944.
17. Baumwol, M. and Park, W.: An acute abdomen: Spontaneous rupture of the liver during pregnancy. *Br. J. Surg.* 63:718-720, 1976.
18. Barry, A. P. and Meagher, D. J.: Rupture of the liver complicating pregnancy: Report of a case. *Obstet. Gynecol.* 23:381-385, 1964.
19. Sanes, S. and Kaminski, C. A.: Spontaneous rupture of liver in eclampsia with fatal hemoperitoneum. *Am. J. Obstet. Gynecol.* 52:325-329, 1946.
20. Mokoloff, F. et al.: Liver rupture complicating toxemia of pregnancy. *Arch. Intern Med.* 119:375-380, 1967.

USE YOUR MEDICAL LIBRARIES

YOUR LIBRARIAN WILL BE

HAPPY TO ASSIST YOU

Paradoxical Embolism

The Shunt Detected by Non-Invasive Method

NIRANDON WONGSURAWAT, M.D.; R. DAVID HOLMSTEN, M.D.,
and FE VILLARANTE, M.D., Topeka

PARADOXICAL EMBOLISM is a condition in which emboli derived from the systemic venous system reach the systemic arterial system by virtue of an abnormal communication between the chambers of the heart. In most of the reported cases, the diagnosis was made following sudden death. A verified case is considered to be one in which an embolus is "caught red-handed" in its passage through a septal defect at the time of postmortem examination.¹ Clinical diagnosis can at best be presumptive and depends on the presence of the triad of venous thrombosis or pulmonary embolism, arterial embolism, and an intracardiac communication.¹

Described here is an instance of paradoxical embolism presumptively diagnosed during life using lung scan to identify the presence of a shunt.

A 58-year-old male was admitted to Topeka Veterans Administration Medical Center complaining of fever and cough of three days duration. Physical examination revealed temperature, 37.8 C; respiratory rate, 20/min; pulse rate, 86/min; blood pressure, 120/76 mm Hg. Fine rales and decreased breath sounds were detected at the right lower lung. Other results of physical examination, electrocardiogram, and blood chemistry were essentially within normal limits. Chest x-ray revealed infiltration of the right lung base. Complete blood count showed leukocytosis with left shift. The patient was treated for pneumonia with an antibiotic. He suddenly developed bilateral pleuritic pain on the third hospital day, and became dyspneic. Arterial blood gases demonstrated alkalosis and hypoxemia: pH = 7.5; oxygen tension (PO₂) = 48.3 mm Hg; saturation = 87%; carbon dioxide tension (PCO₂) = 25.7 mm Hg. A few hours later his left hand became painful and cool, and the left radial pulse was not palpable. Embolectomy was performed that same day through a left brachial arteriotomy. Heparin therapy was initiated and lung scan showed multiple perfusion defects bilaterally. Chest x-ray again showed infiltration in the right lung base. Serial electrocardiogram

and cardiac enzymes were within normal limits. Echocardiogram showed no evidence of mitral stenosis, atrial myxoma, or ventricular enlargement. Blood cultures were negative. A repeat lung scan

A case of paradoxical embolism diagnosed during life is presented. The right-to-left shunt is evident when radioactivity is seen in both kidneys after intravenous injection of ^{99m}Tc macroaggregated albumin. An extra view over the kidney area should be taken routinely during perfusion lung scan in patients with possible pulmonary embolism.

was done on the 13th hospital day. The patient performed a Valsalva maneuver during the injection of ^{99m}Tc macroaggregated albumin. An extra view showing the kidneys was taken (*Figure 1*). The presence of the right-to-left shunt is indicated when the kidneys take up radioactive particles during a lung scan procedure.² With the triad of findings fulfilled, the presumptive diagnosis of paradoxical embolism was made. The patient had been placed on anticoagulation and was discharged in good condition. Three months later he re-entered the hospital with

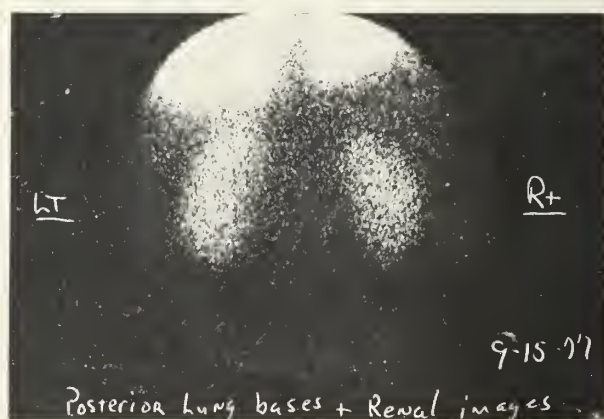


Figure 1. Renal uptake of ^{99m}Tc macroaggregated albumin used in perfusion lung scan indicates the presence of a right to left shunt.

From Cardiac Unit, Department of Medicine, Veterans Administration Medical Center, Topeka.

recurrent pulmonary embolism. Inferior vena caval ligation was performed without delay. The patient was soon able to leave the hospital and has done well since.

Comment

Paradoxical embolism should be considered whenever arterial embolism occurs with no obvious source such as atrial fibrillation, mitral valve disease, myocardial infarction, myxoma of the heart or infective endocarditis, and especially when there is also evidence of venous thrombosis or pulmonary embolism.

Nearly all cases of paradoxical embolism have been associated with a patent foramen ovale, which is present in 20-35 per cent of the population.³ A dye dilution technique is usually used to detect right-to-left shunting through a patent foramen ovale or small atrial septal defect. Performance of Valsalva maneuver during the procedure was recommended because it momentarily increases pulmonary resistance, reversing the normal pressure gradient from left-to-right atrium, and makes detection of a shunt more likely.⁴ However, this may be considered potentially dangerous unless the study is carried out days or weeks after the occurrence of the event, and pulmonary embolism has been resolved. Our patient, after the second lung scan was done, reported pain and a feeling of tightness at the tips of second, third, and fourth fingers of the left hand for the next several days. This episode might have been caused by

blockade of endarterioles in the left hand by macroaggregates of albumin.

The radiopharmaceuticals used in perfusion lung scan are normally trapped in the pulmonary capillary bed. The presence of a right-to-left shunt is indicated by the uptake of the kidneys during a routine lung scan.² It may be wise to routinely take an extra view over the renal area in every perfusion lung scan for pulmonary embolism because the incidence of a patent foramen ovale in the population is relatively high and paradoxical embolism is always a disastrous possibility. Performance of the Valsalva maneuver is probably not necessary in every case because acute massive pulmonary embolism usually increases pressure significantly in the right side of the heart.

In cases of right-to-left shunt, additional risk may exist due to the rapid entry of aggregated albumin particles into the systemic circulation. Injection should be done very slowly with less than 10^5 particles having specific activities up to 10 mCi/mg.⁵

References

1. Johnson, B. I.: Paradoxical embolism. *J. Clin. Pathol.* 4:316, 1951.
2. James, A. V. and Squire, L. F.: *Nuclear Radiology*, Philadelphia, W. B. Saunders Company, p. 44, 1973.
3. Thompson, T. and Evans, W.: Paradoxical embolism. *Quart. J. Med.* 23:135, 1930.
4. Gazzaniga, A. B. and Dalen, J. E.: Paradoxical embolism: Its pathophysiology and clinical recognition. *Ann. Surg.* 171:137, 1970.
5. Rhodes, B. A. et al.: Lung scanning with 99m Tc-Microspheres. *Radiology* 99:613-621, 1971.

MATCH LINE ...

a toll-free telephone service for physicians



1-800-232-4280

providing consultation with cancer specialists at the University
of Kansas Medical Center (In Kansas City, Call 588-5280)

MID-AMERICA CANCER CENTER PROGRAM

AMERICAN CANCER SOCIETY

Thrombectomy

Acutely Occluded Aorto-Coronary Saphenous Vein Bypass Graft

A. GHANI, M.D. and JOHN J. TURNER, M.D., *Youngstown, Ohio,*
and SHANTIKUMAR K. GANDHI, M.D., *Topeka*

MARKED STERNAL separation developed about one week postoperatively in a patient who underwent a saphenous vein bypass graft to the left anterior descending and circumflex vessels. He was then reoperated for sternal closure. At this time, the saphenous vein graft to the left anterior was found to be clotted. A thrombectomy was successfully executed and the sternum was reapproximated. This episode encouraged an elective thrombectomy in the following case.

Case Report

A 42-year-old white male was admitted to the hospital with a complaint of progressively increasing chest pain. Selective coronary arteriograms revealed severe stenosis of the left anterior descending vessel (*Figure 1*). Complete blood count, chest x-ray, electrocardiogram, and other routine admission laboratory tests yielded results within normal limits. The patient underwent aorto-coronary saphenous vein bypass graft to the left anterior descending vessel. On the fourth postoperative day there was evidence of graft thrombosis based on ECG findings and appearance of chest pain.¹ The ECGs showed definite segment elevations that were not present earlier. Selective coronary arteriogram was performed and the thrombosis of the graft was confirmed (*Figure 2*). The catheterization further revealed that the graft was patent proximally at the anastomotic site and had also filled retrograde from the left anterior descending vessel to variable extent.

Findings at operation two weeks following initial surgery were severe inflammatory reaction around the mid-portion of the graft involving the thymus gland. The saphenous vein graft was carefully separated from the dense adhesion between it and the

thymus gland with sharp and blunt dissection. The graft was then transected and thrombectomy was carried out both proximally and distally. Distally a

Postoperative evidence indicated graft thrombosis in a patient who had undergone an aorto-coronary saphenous vein bypass graft to the left anterior descending vessel. The patient was recatheterized and thrombosis of the graft was confirmed. Catheterization also revealed a patent proximal and distal anastomosis. Thrombectomy, without the use of cardiopulmonary bypass, was performed two weeks after the initial surgery. Recatheterization prior to discharge revealed an excellent graft patency.

Fine-Fogarty catheter was passed into the distal left anterior descending vessel with no problem. No cardiopulmonary bypass was utilized for this procedure. Following thrombectomy, the graft was resutured, using 0000000 Prolene stitches. The patient



Figure 1. Preoperative coronary angiogram showing the severe obstructive lesion in the proximal left anterior descending vessel.

From the Department of Thoracic and Cardiovascular Surgery, Youngstown Hospital Association, Youngstown, Ohio.

Address reprint requests to Dr. Gandhi, Director, Department of Cardiac Surgery, St. Francis Hospital and Medical Center, 1700 West 7th Street, Topeka, KS 66606.

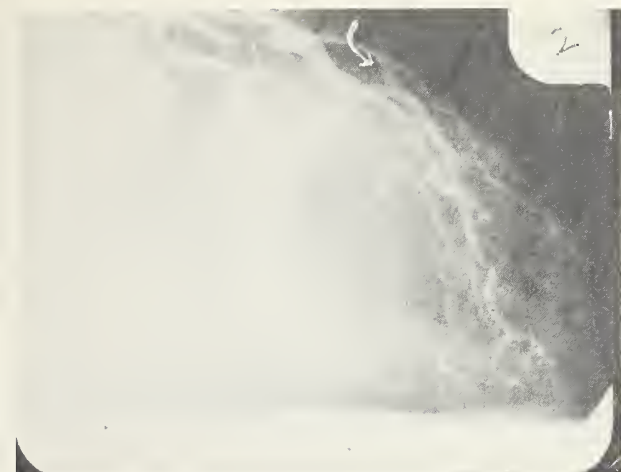


Figure 2. Postoperative coronary angiogram showing the occluded saphenous vein graft being filled retrograde. The arrow shows a small segment of the distal vein graft filling retrograde.

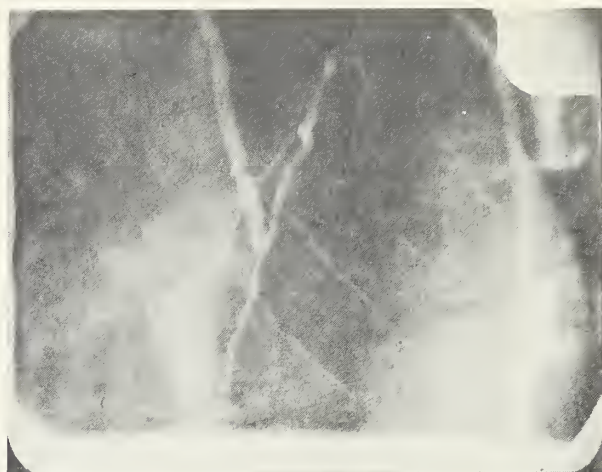


Figure 3. Coronary angiogram showing excellent flow through the saphenous vein graft through the left anterior descending vessel following a successful thrombectomy. No cardiopulmonary bypass was used for this procedure.

tolerated the procedure very well, and it resulted in excellent flow through the graft (Figure 3). Catheterization revealed good patent graft with satisfactory flow one week after the thrombectomy. The patient has remained asymptomatic since discharge; he will be readmitted in one year for further evaluation.

Discussion

Thromboembolectomies are being routinely performed today in several areas of the vascular tree. However, there are no known reports that mention thromboembolectomy of aorto-coronary saphenous vein bypass grafts.

In our experience with two cases, the proximal and the distal anastomoses were patent and in neither of them was it necessary to place the patients on cardiopulmonary bypass. In the case reported above, angiogram showed a partial filling of the graft from both ends.

This experience indicates that whenever there is a suggestion of graft thrombosis postoperatively the patient should undergo a recatheterization. Once the thrombosis is demonstrated, there may be a chance of graft salvage by reoperation and thrombectomy if done within two weeks postoperatively.

The long-term results of thrombectomy are unknown. The causes of graft thrombosis are numerous. During the early period of the coronary bypass surgery it may have been due to technical factors in the anastomosis.^{2,3} Now that the techniques have been well refined this should not be the major cause. The following may be some of the remaining major factors in addition to a bad outflow tract:⁴⁻⁸

1. Tight closure of the pericardium;
2. Too large a vein where the velocity of flow is very slow;
3. Possible tendency of the thymus gland to cause more severe and unusual reactions around the vein;
4. Damaged valves in the vein as a result of passage of probes and dilators through them;
5. Kinking due to excess length;
6. Stretching due to lack of length.

References

1. Moore, Charles H. *et al.*: Diagnosis of perioperative myocardial infarction after coronary artery bypass. *Ann. Thorac. Surg.* 24, #4, 1977.
2. Breyer, Robert H.; Spray, Thomas L.; Kastl, David G. and Roberts, William C.: Histologic changes in saphenous vein aorta-coronary bypass grafts: The effect of the angle of the aortic anastomosis. *J. Thorac. Cardiovasc. Surg.* 72, #6, 1976.
3. Griffith, Lawrence S. C.; Bulkley, Bernadine H.; Hutchins, Grover M. and Brawley, Robert K.: Occlusive changes at the coronary artery-bypass graft anastomosis: Morphologic study of 95 grafts. *J. Thorac. Cardiovasc. Surg.* 73, #5, 1977.
4. Batayias, George E.; Barboriak, Joseph J.; Korns, Michael E. and Pintar, Karl: The spectrum of pathologic changes in aortocoronary saphenous vein grafts. *Circulation* 56, #3, 1977.
5. Lawrie, Gerald M.; Lie, J. T.; Morris, George C., Jr., and Beazley, H. Liston: Vein graft patency and intimal proliferation after aortocoronary bypass: Early and long-term angiopathologic correlations. *Am. J. Cardiol.* 38, December 1976.
6. Rimm, Alfred A. *et al.*: The probability of closure in aortocoronary vein bypass grafts. *JAMA* 236, #23, 1976.
7. Spray, Thomas L. and Roberts, William C.: Status of the grafts and the native coronary arteries proximal and distal to coronary anastomosis sites of aortocoronary bypass grafts. *Circulation* 55, #5, 1977.
8. Spray, Thomas L. and Roberts, William C.: Changes in saphenous veins used as aortocoronary bypass grafts. *Fund. Clin. Cardiol.* 94, #4, 1977.



Current COMMENT

Bronchodilator Therapy

MARK S. FIXLEY, M.D.,* *Kansas City, Kansas*

A SIGNIFICANT proportion of asthmatic patients suffer from mild to severe functional disability. The disease is characterized by episodic or chronic airflow obstruction which can be diagnosed by routine pulmonary function tests. Pathophysiologically, one of the major causes for the obstruction to airflow is bronchospasm, which leads to a reduction in airway caliber and thus an increase in the resistance to airflow. Excessive bronchopulmonary secretions or inflammation of the bronchial mucosa can also contribute to the airway narrowing. Many patients with chronic obstructive pulmonary disease (COPD) have a bronchospastic component to their disease. A number of drugs are available to counteract or modify the bronchospasm, excess secretions, and mucosal inflammation. A clear understanding of these agents is necessary to effectively treat patients suffering from asthma and COPD. The major classes of bronchodilator drugs currently available include: sympathomimetics, methylxanthines, and corticosteroids.

The sympathetic nervous system has both alpha and beta adrenergic receptors. Beta adrenergic receptors can further be separated into beta₁ and beta₂ sites. Beta₁ receptor activation has a positive inotropic and chronotropic action on the heart. Pharmacological stimulation of the beta₂ adrenergic receptors by sympathomimetic agents causes bronchodilation. This stimulation increases the activity of adenylyl cyclase, an enzyme in the cell membrane which catalyzes the formation of cyclic adenosine-3', 5'-monophosphate (c'AMP). Increased c'AMP causes bronchial smooth muscle re-

laxation.¹ Cyclic AMP is degraded by the enzyme, phosphodiesterase, whose activity is inhibited by methylxanthines such as theophylline. Thus two classes of bronchodilators, acting by different mechanisms, work in synergy to achieve bronchodilation.² Many of the beta adrenergic agents have also been shown to increase the tracheal mucous velocity.³ In some patients with asthma, chemical mediators — such as histamine and slow reacting substance of anaphylaxis (SRS-A) — may be released from mast cells in response to the antigen-antibody interaction and cause bronchoconstriction. The synthesis and release of mediators are inhibited by c'AMP. Cromolyn sodium is thought to act by preventing the release of chemical mediators. It is not a bronchodilator, and is only used prophylactically in selected patients.⁴

Sympathomimetics

Epinephrine produces both alpha and beta adrenergic effects, with the beta action being more clinically significant. It has a short duration of action (2-3 hrs) and is given by subcutaneous injection. Epinephrine in a 1 : 1000 solution and an appropriate dose can be used to treat acute asthma attacks, especially in children. The development of tolerance or complete refractoriness with repeated use limits its effectiveness. An aqueous suspension of epinephrine can be used to achieve a sustained action of 4-6 hrs.

Isoproterenol (Isuprel) is a potent beta adrenergic agent. The main disadvantages of the drug are its non-selective beta stimulation, producing cardiac arrhythmias, and its short duration of action (1-3 hrs). The drug should be administered only by inhalation of an aerosolized solution. In general, the dose is 5-15 inhalations of the 1 : 200 solution delivered by a hand bulb nebulizer, or 0.25 or 0.5 ml of the

* Assistant Professor of Medicine, Division for Pulmonary Diseases, UKSM-KC.

Address reprint requests to Dr. Fixley, Division for Pulmonary Diseases, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

solution diluted in 5 ml of normal saline and nebulized by a motorized compressor unit. A small percentage of asthmatic patients will develop acute bronchoconstriction in response to inhalation of isoproterenol. A metered dose inhaler is also available and requires one to two inhalations per dose. Because of the ease with which these metered inhalers can be carried with the patient, there is potential for excessive use and its related toxicities can be a problem.

Ephedrine was the first effective oral preparation for the treatment of bronchospasm. Because of its stimulation of the central nervous system (CNS), the development of tolerance and its lack of β_2 selectivity, it now plays a limited role in the rational treatment of chronic obstructive lung disease or asthma.

With the advent in the last few years of the more selective β_2 drugs, physicians now have at their disposal more effective oral and aerosolized bronchodilators.² These agents have minimal cardiac side effects, but they may cause a slight increase in heart rate.

Isoetharine (Bronkosol) is available as a solution for aerosolization or as a metered-dose inhaler. It has a mild degree of β_2 selectivity. The main disadvantage is its relatively short duration of action of 2-3 hrs. One-quarter to one-half ml of the solution can be inhaled via hand-bulb nebulizer or diluted with 3-5 ml of normal saline and inhaled from a compressed air nebulization system. Two inhalations of the metered dose inhaler every 4-6 hrs is the usual dose for an adult.

Metaproterenol (Alupent or Metaprel) is longer acting (3-6 hrs) and has some selective β_2 activity. In the metered dose inhaler it is probably the agent of choice for aerosolized bronchodilator therapy. An oral preparation is also available (10-20 mg/6 hrs in adults), but has an appreciable rate of adverse effects. These include nervousness, sinus tachycardia, and muscle tremor.

Terbutaline (Brethine, Bricanyl) is the most selective β_2 agent available in the United States.⁵ The subcutaneous dosage form offers little real advantage over that of epinephrine. Terbutaline is also available in 2.5 and 5 mg tablets which have a duration of action of 4-8 hrs. There is a significant incidence of nervousness and muscle tremor with the 5-mg dose. These side effects are much less common with the 2.5-mg dose, but the degree of bronchodilation is also greatly different between the dosages.⁶ The usual dosage for adults is 2.5-5.0 mg every 8 hrs.

Methylxanthines

Theophylline is the prototype agent in this class of drugs. It is available for oral administration under many different trade names and as several derivatives. Theophylline is also available in combination with various sympathomimetics and sedatives. Because these combination drugs are more expensive, contain sedatives and do not allow for individualization of the theophylline dosage, they should not be prescribed. Aminophylline, the ethylenediamine salt of theophylline, can be given intravenously. Aminophylline preparations for rectal administration may result in proctitis and erratic blood levels, and thus have limited clinical efficacy. The common side effects include gastric irritation and CNS stimulation. Serious toxicities, related to high blood levels include: nausea, vomiting, seizures, and cardiac arrhythmias.

Theophylline is metabolized in the liver. The normal plasma half life in adults is 4-5 hrs, but the range is wide (3.0-9.5 hrs). In children the half life is shorter ranging from 1.5-9.5 hrs. In patients with liver disease or cardiac failure with passive venous congestion of the liver, the dose should be reduced by 50 per cent.² Cigarette smoking and phenobarbital shorten the plasma half life of the drug. For the average patient the usual oral dose of theophylline is 4 mg/kg/6 hrs. Several sustained-release preparations are now on the market and may allow the patient to take 8 mg/kg/12 hrs. The most important point to remember is that the dose must be tailored to each patient. For intravenous use, aminophylline is given in a loading dose of 5-6 mg/kg over 15-20 min. The loading dose should be reduced by at least 50 per cent for patients already taking oral theophylline. Cardiac monitoring is essential for acutely ill, hypoxic patients. A continuous intravenous infusion is then continued at a dose of 0.9 mg/kg/hr (range 0.6-1.3 mg/kg/hr). For patients with liver disease or heart failure, the maintenance dose must be reduced to approximately 0.45 mg/kg/hr.

Plasma theophylline levels are now generally available in many hospitals. The measurement of the plasma levels is useful to regulate the dose in patients when toxicity or sub-therapeutic levels are suspected. The normal therapeutic range is 10-20 $\mu\text{g/ml}$. Little bronchodilation is achieved below levels of 10 $\mu\text{g/ml}$, and toxicity is common at levels greater than 20 $\mu\text{g/ml}$.

Corticosteroids

Although corticosteroids have been used in the treatment of reversible airways obstruction for many

years, their mechanism of action is unknown. Their use remains controversial. These drugs probably act mainly as an anti-inflammatory agent to reduce mucosal edema. They also act directly to relax bronchial smooth muscle and may aid in increasing responsiveness to the sympathomimetics.² The side effects of long-term systemic steroid use are all too common and should be well known to all physicians. Obesity, diabetes, cataracts, osteoporosis, hypertension, infection, and peptic ulcer are a few of the more serious ones. Because of their many side effects, corticosteroids should be used only in patients with severe bronchospasm or in patients not responding optimally to maximal therapy with other classes of bronchodilators. They should never be used alone, but always in addition to the agents previously discussed.

In patients with status asthmaticus or severe bronchospasm and severe hypoxia or hypercarbia, intravenous steroids are indicated. The optimal dosage remains controversial but, in general, methylprednisolone 40-125 mg/6 hrs is usually adequate. This does not cause immediate bronchodilation. Usually onset of action is delayed 6-8 hrs or longer. There are no "cookbook recipes" to use as a guide regarding the dose or duration of usage for these agents. Care-

ful monitoring of each patient's clinical status, arterial blood gases, and pulmonary function tests (peak flow or FEV₁) is indicated. Using these guidelines the intravenous drug is reduced while dosage is switched over to an oral preparation. Close monitoring for an exacerbation of the bronchospasm is necessary while tapering the steroids.

The oral use of corticosteroids is indicated for those patients being tapered off of an intravenous steroid or those patients not controlled by the other classes of bronchodilators. Prednisone is the preferred drug because of its relatively short half life. This drug should always be administered in the lowest possible daily dose or, even better, in an every-other-day dose (less adrenal suppression) that will produce the desired therapeutic effect. The dose should be given in the early morning so as to cause less adrenal suppression. Two or more daily doses will be required by only a few severe asthmatics. An attempt should always be made to control the patient's airflow obstruction without the long-term daily use of systemic steroids.

Beclomethasone dipropionate (Vanceril), a synthetic steroid derivative with a high relative topical activity, is now available. It is delivered topically as an aerosol. The usual daily dose is 400 µg, or two

TABLE 1. COMMONLY USED BRONCHODILATORS

DRUG CLASS	MECHANISM OF ACTION	AGENTS OF CHOICE
SYMPATHOMIMETICS	BETA ADRENERGIC STIMULATION	AEROSOL - METAPROTERENOL
	INCREASING C'AMP, RELAXING	(ALUPENT, METAPREL)
	BRONCHIAL SMOOTH MUSCLE AND	ISOETHARINE
	BLOCKS MEDIATOR RELEASE	(BRONKOSOL)
		ORAL - TERBUTALINE
		(BRETHINE, BRICANYL)
		SUBCUTANEOUS - EPINEPHRINE
		TERBUTALINE
METHYLXANTHINES	INCREASES C'AMP BY INHIBITING	ORAL - THEOPHYLLINE
	PHOSPHODIESTERASE	INTRAVENOUS - AMINOPHYLLINE
CORTICOSTEROIDS	ANTI-INFLAMMATORY EFFECT	ORAL - PREDNISONE
	DECREASES MUCOSAL EDEMA AND	
	INCREASES RESPONSIVENESS TO	INTRAVENOUS - METHYLPREDNISOLONE
	BETA ADRENERGIC STIMULATION	(SOLU-MEDROL)
		AEROSOL - BECLOMETHASONE
		(VANCERIL)

puffs, inhaled four times. Some patients will require large doses, but adrenal suppression does not occur even at the maximum daily dose of 1,000 μg . Not all patients requiring systemic steroids can be tapered off the systemic drug. The main side effect is oropharyngeal candidiasis (5% or less with the 400 μg dose). Gargling and rinsing the mouth thoroughly with an alcohol-base mouthwash after each dose will usually prevent this complication.

Steroid-dependent patients should be placed on the aerosolized steroid in combination with the systemic steroid for two weeks before an attempt to taper the systemic dose is made.² Slow tapering of the Prednisone dosage is accompanied by a close watch for signs of worsening of the airflow obstruction or adrenal insufficiency. A daily dosage of 400 μg has been shown to equal 7.5-10 mg of Prednisone, but the amount of Prednisone that can be replaced varies widely from patient to patient. Patients on beclomethasone may require intermittent courses of systemic steroids for acute exacerbations.

Summary of Therapy

A brief outline of the major classes of bronchodilators and the likely agents of choice is shown in *Table I*. Patients with mild airflow obstruction may be adequately controlled with only an inhaled sympathomimetic drug such as metaproterenol or isoetharine. When optimal treatment with one of these agents is inadequate, one should then add continuous therapy with theophylline. If symptoms are still not controlled, oral β_2 stimulating agent can be added to the regimen. With continued failure to achieve a maximal response, the physician should then consider the addition of systemic steroids or preferably inhaled beclomethasone. Acute exacerbations characterized by severe bronchospasm require systemic, sometimes intravenous, steroids in combination with intravenous aminophylline and an aerosolized adrenergic drug.

Self-Assessment Questions

(Choose the one best answer)

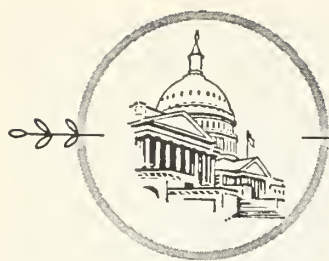
1. In patients with chronic airflow obstruction, all but one of the following can be important factors producing the obstruction.
 - a. bronchospasm
 - b. muscle wasting and weakness of respiratory muscles
 - c. excess secretions (mucus) in the airways
 - d. edema and inflammation of bronchial mucosa

2. Choose the one combination of drugs listed below that work in synergy to produce bronchodilation.
 - a. ephedrine and pentobarbital
 - b. theophylline and an antibiotic
 - c. metaproterenol and theophylline
 - d. beclomethasone and prednisone
3. The most selective β_2 adrenergic agent available in this country is:
 - a. epinephrine
 - b. isoproterenol (Isuprel)
 - c. Isoetharine (Bronkosol)
 - d. terbutaline
4. A patient with severe COPD and cor pulmonale is admitted to the intensive care unit. You administer the proper loading dose of intravenous aminophylline over 20 minutes and then would continue the drug by constant infusion at a dose of:
 - a. 0.45 mg/kg/hr
 - b. 1.3 mg/kg/hr
 - c. 5.6 mg/kg/hr
 - d. 0.9 mg/kg/hr
5. A patient with status asthmaticus and severe hypoxemia is admitted to the hospital. As an outpatient, he had been on maximal doses of aerosolized isoetharine (Bronkosol), terbutaline, and theophylline. Besides continuing these agents in appropriate doses, you would also order:
 - a. sedative
 - b. Digoxin, 0.25 mg daily
 - c. Solu-Medrol 125 mg every 6 hours, intravenously
 - d. an expectorant

(Answers on page 34)

References

1. Jenne, J. W.: The clinical pharmacology of bronchodilators. *Basics of Respiratory Disease* 6, September, 1977.
2. Webb-Johnson, D. and Andrews, J. L., Jr.: Bronchodilator therapy. *N. Engl. J. Med.* 297:476-482, 758-764, 1977.
3. Sackner, M.: Effect of respiratory drugs on mucociliary clearance. *Chest* 73:958(suppl), 1977.
4. Bernstein, L. I.; Johnson, C. L. and Tse, C. S.: Therapy with cromolyn sodium. *Ann. Intern. Med.* 89:228, 1978.
5. Geumei, A. M. and Miller, W. F.: New oral bronchodilator drug with relatively selective stimulation of β_2 -adrenergic receptors. *Chest* 72:267, 1977.
6. Wolfe, J.; Taskin, D.; Caloaresse, B. and Simmons, M.: Bronchodilator effects of terbutaline and aminophylline alone and in combination in asthmatic patients. *N. Engl. J. Med.* 298:363, 1978.



Socio- ECONOMICS

Chicken Tracks

Ed Note: This is the tenth in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December 1978.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

IT HAS BEEN theoretically estimated that out of a group of 5,023 physicians, 4,927 will not be able to write legibly. For a half century or more, doctors' handwriting has been a standard stage joke.

It is no longer a joking matter. Here are some "ferinstances":

- An attorney called the AMA Department of Practice Management because the doctor-client he was representing had been refused payment by a third party carrier, specifically on the grounds that his medical records were inadequate and illegible.

- In a small group practice, where doctors take turns for evening and weekend coverage, one physician's writing is so bad that the doctors covering for him gave up trying to review his records when his patients come to the clinic. They have to treat his patients as new patients.

- At training programs held across the country for medical office assistants, one of the chief complaints expressed was, "How can I get my doctor to write legibly?"

- Illegible prescriptions result in thousands of unnecessary telephone calls by pharmacists to verify the hieroglyphics on the prescription form. Of more concern are the pharmacists who don't call — but just guess.

Medical records that can only be deciphered — with some difficulty — by the doctor who writes

them are not the best evidence in a malpractice suit. And the AMA still receives some inquiries written in long hand from physicians which have to be passed to two or three different persons to help translate the hand writing — and then one is not always sure of the correct intent of the inquiry. This article was initiated by just such a letter.

Illegible handwriting is a serious matter for the busy physician. It is difficult to correct for the doctor who for 20 years has been making chicken tracks on his medical charts that only he can understand. It is a little late for him to go back to school and take a course in "Professional Penmanship for Physicians." However, there are two things that can be done:

1. Corrective action can be taken for illegibility that is caused by carelessness or haste. Carelessness is no excuse, and if haste is the problem there are alternatives that should be considered.

2. A portion of the problem can be prevented by reducing the handwriting tasks through preprinted and checkoff forms and by doing more dictating.

Information gained from practice management programs held around the country indicate an increasing number of physicians are dictating medical records. The records are legible and the physician saves time. The new dictating and transcribing equipment on the market today is low in cost, high fidelity, and easy and convenient to use. There is also help for the transcriber. She can now get pressure adhesive paper in rolls or fan-fold designed to speed up typing and entering progress notes in the medical records.

The treatment for illegible writing does not lie in trying to find some easy and miraculous cure, but in recognizing the situation; taking corrective action to reduce the haste or careless results, and reducing the amount of handwriting required by using preprinted forms, checkoff systems, and doing more dictating.

The President's Message

The interim meeting of the House of Delegates of the American Medical Association was lively in its discussion of two issues: chiropractors and their suits against AMA, and National Health Insurance. A report on these two issues and the AMA decisions on them will be submitted by our delegates, Drs. Clair Conard and Alex Scott. A corollary issue in the chiropractic question, that is and will continue to be an issue in future AMA House of Delegates deliberations, is the Principles of Medical Ethics of the AMA.

A revision of the Principles was referred to an Ad Hoc Committee for further study after spirited and emotional debate in the reference committee and on the floor of the House last June in St. Louis. There are two main positions. The first wishes to retain the Principles without modification, in the belief that the revised version strips the Principles of their force and liberalizes them to an unacceptable degree. The second group feels that the revision merely states the Principles in terms of modern day language and practices in conformity with recent court decisions. Still others wonder, why all the fuss about ethics? Is a code of ethics really necessary? After all, we're all adults and know right from wrong. Besides, times have changed and there can be no rigid principles! Right and wrong depend on the situation and the circumstances surrounding it. "If it feels good, do it!" is the motto of many today.

Which point of view is correct? Ethics are merely principles of right conduct especially with reference to a specific profession. It is the distillation of centuries of experience with human conduct and what has been judged to be in the best interests of society as a whole, often from theological precepts.

Times do change, but do people? In our time we have seen the conquest of smallpox, but have we made any inroads on greed? Tetanus, pertussis, polio, pneumococcal pneumonia are almost vanquished through vaccines, but are there any "magic bullets" against selfishness, jealousy, hatred, anger, or pride?



As a profession, we hold a body of knowledge not common to ordinary individuals. That knowledge can be used for good or for evil. We can protect our patients from abuse or we can use them for our personal gain, our emotional satisfaction, or power.

A code of ethics is necessary and its principles should exceed those expected of the common man because it gives us a guide for our conduct, serves as a standard by which to judge differences, protects the patient from abuses, and retains the trust and confidence of our patients so necessary in the doctor-patient relationship.

It should be an inspiration toward an ideal that we should constantly strive to attain even though we realize our inadequacies and shortcomings. It should make us better individuals than we really are.

A copy of the present Principles is found on page 376, the 1978 Roster issue of *The Journal of the Kansas Medical Society*. Read it over. A report of the Ad Hoc Committee will be made to the House of Delegates at its annual meeting in Chicago next July. Copies of the proposed revisions may be obtained from the AMA or the KMS. Let your delegates know your views!

Fraternally yours,

Warren E. Meyer, M.D.

President



Editorial COMMENT

The secularization of the medical profession of recent decades has produced some startling changes in concept. The official advisories of the various controlling agencies have instructed us, from time to time, that our behavior must conform to a pattern we thought not only inimical to our purpose but totally inappropriate and possibly illegal. The profession has generally reacted with vocal resistance and practical accommodation (translation: you win some, you lose some). After this initial resistance, we have generally accepted the new order with some lack of fervor but an attitude described as facing up to reality (another translation: if you can't lick 'em, join 'em). At any rate, it is becoming increasingly apparent that courses in sociology, economics, and political science are as necessary a preparation for the practice of medicine as the traditional basic sciences. Even our favorite medical society offered, at its latest annual meeting, a full day devoted to these social, economic, and political "realities" and meriting — guess what? — six hours of continuing *medical* education credit.

All in all, it may not be surprising that the practice of medicine, late 20th century style, has been interpreted by the Federal Trade Commission as a rightful object of its baleful scrutiny, and our hyperperistalsis recorded above was produced by the recent decisions of one of its judges that the medical profession's ethical objections to advertising by its members have been a crass effort to restrain the health care trade (sic), create a monopoly, increase costs, and so on, all to the benefit of the physician and detriment of the public. This thralldom in which the patient is held can be dispelled if said public has the benefits of the frenetic advertising techniques which we all have come to depend upon for orientation to our complicated social scene. This reflects the same mentality that contends that the high standards established for admission to medical school are a contrived "closed shop" technique designed to limit the output of physicians and assure them a healthy financial climate.

The Uncommon Code

Now, these ideas are not entirely new — we went through the same thing with the lawyers not so long ago and Ralph Nader and Sydney Wolfe rediscover them every so often, but now the full bureaucratic treatment is about to be applied. At this writing, the Commission is due to consider the judge's findings shortly and you can make book on their agreement. Time was when we were dismayed by this attitude that the economic benefits to the profession were its prime movers. Proselyted by those medical Fagans who inducted us into the group, we presumed that advertising could be a bid to misleading or exploiting the unsuspecting patient. We mistook the deliberately high medical school admission requirements as a means of better and safer and more effective medical service rather than an effort to subjugate the patient to our fiscal caprices.

But we have seen the light and now recognize how wrong we were and, while some may cry alarm at these developments, we are herewith doing penance in the most effective way we know. Our friends at the FTC have been hampered by having to interpret the situation and work back to the organizational cause. We want them to know that they have hardly scratched the surface. They may not realize that the AMA has condemned itself by putting a whole series of these self-serving pronouncements on paper, each one embodying a crafty formula for disfranchising the patient. This Code of Ethics, examined in this light, is revealed as a master plan for medical domination and the Commission, with our help, can strike the medical shackles from the victims — pausing long enough, of course, to obtain the appropriate monies from Congress.

For example, the very first section of the Code calls upon physicians, in their care of patients, to render "to each a full measure of service and devotion." This means, of course, that a basic principle of medical practice is to load the patient with everything possible. This explains the notorious effort of the medical profession to order excessive tests, pre-

scribe excessive medications, and promote esoteric and unconscionably expensive therapies. And the Commission can see not only the abuses by physicians but the invitation to collusion with others in the trade. "Service to humanity" is simply a directive to include everyone and give them the works — nothing less than a full tank of high octane stuff — no self-serve pumps at this station! Maintaining the "dignity of man" is just a means of justifying the greatest expense possible.

Then Section 2 says the physician should improve his knowledge and skill. You may have thought this was intended to keep him more effective and productive for the sake of the patient and the community. But now the FTC can expose it for what it is — physicians goofing off at some tax-deductible session and coming home to boost their charges on the presumption of better care. Ever hear one of them say, "I don't know what's wrong with you so I won't charge you?" No, he tells the patient to come back in another week and then runs and looks in the book — that way he can charge for another visit. Oh, FTC, save us from ourselves.

It's more of the same in Section 3, which says we should be scientific and stay away from those characters who aren't. Just another ploy to keep the patient corralled and deny him the benefits of all those nostrums that would solve his problems (which we don't want, of course, since then we'd have no patients). Clearly, we have a cunningly planned policy to limit the patient's choice of therapies, to capitalize on new developments, to control the consumer and the consumables, all to the benefit of the physician's finances. We're not just trying to restrain trade, commissioners — we're trying to take it over completely.

The unsuspecting would think that Section 4 is for the benefit of the public, since it says we're responsible for safeguarding it against physicians "deficient in moral character or professional competence." This is to support the fiction that the physician's interest is in the welfare of his patients when, in reality, it is just another effort to limit the supply and deny to patients freedom of choice. After all, it goes on to say physicians should accept the profession's "self-imposed disciplines" so you see who is making the judgment. Hard to beat a system where the home team supplies the officials. But you have to go a long way to beat that Section 5, where it says, "A physician may choose whom he will serve." Could you ask for a more frank expression of the Robber Baron "public be damned" attitude wrapped up in ethical camouflage? True, it says once the physician starts to take care of the patient he can't

abandon him. What that means is play him easy until you get him hooked, then reel him in — unless, of course, he is financially undersized. Then you can put him back in the government pond.

Well, that's only the half of it — there are five more sections. Come to think of it, the FTC has been derelict in its duty to have let us sin for so long. We had presumed all along that it knew about this ethical manifesto that has been cloaking our true intentions over the years (after all, "Mein Kampf" told us just what Hitler planned to do even if we chose not to believe it). But we're not going to do all their work for them — they can take it from here. Anyway, the AMA is due to come out soon with an updated Code of Ethics.

But wait a minute. Maybe there is something else that should be mentioned. The FTC judge, at the same time he made his decision, ordered the AMA not to release any new codes *without the FTC's scrutiny and approval*.

Now where did we get the idea they needed any help? — D.E.G.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

**Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612**



The Kansas Press Looks at Medicine

The American Medical Association, and many of its members, long have been in the lead of advocacy for free enterprise and a reduction of controls over individuals and their activities.

They must be most gratified, therefore, that a move by the Federal Trade Commission to permit advertising by doctors has been strengthened with a favorable decision from an administrative law judge.

Doctors have been forbidden to advertise by a code of ethics. Just why this should be never has been satisfactorily explained, at least not to their customers or potential customers.

The judge says this ban has put a "formidable impediment" on competition in health care. So it has. One result has been to send medical fees sky high. Another has been to keep consumers ignorant,

not only about costs but also about changes or "anything that could potentially pose a threat to the income of fee-for-service physicians in private practice."

That is plain enough.

The legal argument is that the ban on advertising is a restraint of trade and a violation of antitrust laws. That may be bolstered with constitutional arguments that such a restraint invades individual rights.

At any rate, it's a win for both doctors and customers. Doctors will be able to enter the world of free enterprise which they so fervently espouse. Customers will be able to do some comparative pricing and will be better informed on how health services function. This can only be to their benefit. —*Hutchinson News*, Dec. 5, 1978

BC-BS Rates

Blue Cross and Blue Shield of Kansas have decided to seek judicial review of the State Insurance Department's decision not to approve their recent filing of rates. Differences on the various issues involved are of such significance that a court decision will be requested. Among the issues involved, according to the Chairmen of the Blue Cross and Blue Shield Boards, are the questions of administrative expenses and the effectiveness of cost containment measures in the Plans' contracts with providers.

While seeking a judicial decision, the Plans will continue to operate on the 1978 dues structure and no change will be made in current subscriber rates for those categories affected by the filing.

The organizations filed rates with the Insurance Department in August 1978, requesting adjustments

for small groups of less than 25 employees, farm organizations, non-group, and Plan 65 and Plan D subscribers. These new rates would have involved 367,000 Kansans. The total amount requested at that time was \$21,940,000 annually for expected increases in cost and use of services. This application was twice denied by the Insurance Department, the second time following a public rate hearing in October 1978, which the Plans had requested. The Insurance Department's only choice on such rate filings is either to accept or deny.

The only other option open to the Plans was to refile rate increases at lower levels than those originally filed. Such an action, however, would not have been fiscally responsible in view of the current level of the Plans' contingency reserves, which are still considerably below what the Plans' Boards of Directors feel are desirable.

REVISED FORMAT STATE MEETING

IMPORTANT MEETING REMINDER

120th Annual Session of
THE KANSAS MEDICAL SOCIETY

May 3-6, 1979

Holiday Inn-Holidome, Hutchinson

New Format—Thursday-Sunday

<i>Thursday, May 3</i>	Sports Day Sports Banquet	
<i>Friday, May 4</i>	House of Delegates Delegates Luncheon Reference Committee KaMPAC Hospitality Suite Special Entertainment	9:00 a.m. 12:30 p.m. 2:00 p.m. 4:00 p.m.
<i>Saturday, May 5</i>	Past Presidents Breakfast Scientific Session General Luncheon KU Alumni Reception for Physicians & Spouses Annual Presidents Banquet	7:30 a.m. 8:30 a.m.-5:00 p.m. 12:00 noon 5:30 p.m. 7:00 p.m.
<i>Sunday, May 6</i>	Early Bird Breakfast House of Delegates Council Luncheon & Meeting	7:30 a.m. 9:00 a.m. 1:00 p.m.

Detailed information and registration forms will be mailed prior to the meeting.

The Kansas Medical Society — 1978-1979

OFFICERS

President	Warren E. Meyer, Wichita
Immediate Past President	John D. Huff, Kansas City, KS
President-Elect	Donald D. Goering, Salina
First Vice President	Phillip A. Godwin, Lawrence
Second Vice President	Herman W. Hiesterman, Quinter
Secretary	Jack R. Cooper, Shawnee Mission
Treasurer	William K. Walker, Sedan
A.M.A. Delegate	Clair C. Conard, Dodge City
A.M.A. Delegate	Alex Scott, Junction City
A.M.A. Alternate	Lew W. Purinton, Wichita
A.M.A. Alternate	Kermit G. Wedel, Minneapolis
Chairman of Editorial Board	David E. Gray, Topeka

COUNCILORS

District 1	Roger D. Warren, Hanover
District 2	Robert P. Hudson, Kansas City
District 3	Lewis G. Allen, Jr., Shawnee Mission
District 4	George W. Pogson, Pittsburg
District 5	Kenneth M. Boese, Manhattan
District 6	Millard C. Spencer, Topeka
District 7	Marvin Snowbarger, Emporia
District 8	Steven J. Smith, Arkansas City
District 9	Herbert D. Doubek, Belleville
District 10	Herbert Fransen, Newton
District 11	Ivan E. Rhodes, Wichita
District 12	Philip J. Antrim, Anthony
District 13	L. William Halling, Hays
District 14	Edward L. Jones, Great Bend
District 15	Evan R. Williams, Dodge City
District 16	Floyd L. Smith, Jr., Colby
District 17	Max E. Teare, Garden City
District 18	Robert W. Hughes, Lawrence
District 19	Robert F. Moore, Caney

OFFICERS OF COMPONENT SOCIETIES — 1979

<i>Society</i>	<i>President</i>	<i>Secretary</i>
Allen	George F. DeTar, Iola	Eugene Myers, Iola
Anderson	Thomas M. Dougherty, Garnett	C. B. Harris, Garnett
Atchison	W. Spencer Fast, Atchison	Robert E. Fast, Atchison
Barton	W. C. Niederee, Great Bend	Perry Schuetz, Great Bend
Bourbon	Carlyle M. Dunshee, Fort Scott	Charles S. Reeves, Fort Scott
Butler	Louis S. Morgan, Wichita	N. H. Overholser, El Dorado
Central Kansas	Robert Cox, Hays	W. M. Newcomb, Hays
Cherokee	R. M. Chubb, Baxter Springs	Orville A. Mehaffy, Baxter Springs
Clay	Richard H. O'Donnell, Clay Center	Richard C. Carleton, Clay Center
Cloud	James W. Lloyd, Concordia	Avis P. Bray, Concordia
Cowley	James N. Winblad, Winfield	Armand N. Kaul, Winfield
Crawford	Harold James Armstrong, Pittsburg	F. A. Tweet, Pittsburg
Dickinson	Don H. Berkley, Abilene	C. R. Svoboda, Chapman
Douglas	Donald W. Hatton, Lawrence	Michael A. Well, Lawrence
Edwards	W. L. McKim, Kinsley	M. D. Atwood, Kinsley
Flint Hills	H. Russell Bradley, Emporia	W. Scott Ryan, Emporia
Ford	Carl K. Zacharias, Dodge City	Howell D. Johnson, Dodge City
Franklin	R. E. Sutton, Ottawa	Stephen Saylor, Ottawa
Geary	Gary A. Copeland, Junction City	Charles S. Bollman, Junction City
Harvey	Milton A. Claasen, Newton	A. J. Aillon, Halstead
Iroquois	J. R. Bradley, Greensburg	Lyle G. Glenn, Protection
Jackson	J. C. Seeley, Holton	M. R. Moser, Holton
Jefferson	R. R. Snook, McLouth	R. C. Keys, Sr., Winchester
Johnson	Wendell L. Good, Shawnee Mission	Michael Aronoff, Olathe
Labette	S. Paranjothi, Parsons	Terry Rothstein, Parsons
Leavenworth	Carroll D. Voorhees, Leavenworth	M. Zia Anwar, Leavenworth
McPherson	V. C. Price, McPherson	Weir Pierson, McPherson
Marion	James Canellos, Goessel	R. G. Franz, Hillsboro
Miami	R. E. Banks, Paola	J. G. Rowlett, Paola
Mitchell	Martin B. Klenda, Beloit	Carl W. Plowman, Jewell
Northeast Kansas	Roger Warren, Hanover	Tom A. Montgomery, Sabetha
Northwest Kansas	John R. Neuschwander, Hoxie	George D. Marshall, Colby
Pawnee	Ole R. Cram, Larned	Thomas D. Ewing, Larned
Pottawatomie	Bill L. Braden, Wamego	Laurence A. Clark, Wamego
Pratt-Kingman	T. L. Waylan, Nashville	Cyril V. Black, Pratt
Reno	David H. Tweito, Hutchinson	Robert Stafford, Hutchinson
Republic	Duane L. Scott, Belleville	James A. Ward, Belleville
Rice	C. V. Wolf, Lyons	R. A. Siemens, Lyons
Riley	Gerald L. Mowry, Manhattan	Kenneth M. Boese, Manhattan
Saline	R. B. Coffey, Salina	Gerald K. Palmer, Salina
Sedgwick	R. L. Cummings, Wichita	Jack Moseley, Wichita
Seward	Jess W. Koons, Liberal	Jack D. Reese, Liberal
Shawnee	Robert E. Roeder, Topeka	Stuart C. Averill, Topeka
South Central Tri-County	Joel T. Weigand, Wellington	L. T. Bloom, Harper
Southeast Kansas	Don White, Coffeyville	Bob Haskins, Chanute
Southwest Kansas	Richard W. Kalboc, Garden City	Frank D. Eichorn, Garden City
Stafford	Robert L. Ward, Stafford	C. Everett Brown, Stafford
Wyandotte	Barbara P. Lukert, Kansas City	R. P. Hudson, Kansas City

announcing . . . national medicolegal symposium 1979



Jointly sponsored by the
American Medical Association
and American Bar Association
Caesars Palace Hotel
Las Vegas, Nevada
March 8-11, 1979



purpose:

**To stimulate interest and cooperative
action between the two professions in
searching for answers to the many problems
which confront the nation today.**

- Who's Tinking with the Tort System—and Why?
- The Courts and Arbitration—Differences and Similarities
- Death—Living Wills—Right to Die—No Code Blue
- Medical Profession Future
- Legal Profession Future
- The Legal Status of Medical and Lay Personnel Connected with Operation of a Hospital
- Prescription Drugs; Reactions; Package Inserts and Liability
- Profession-Owned Insurance Companies. Medical and Legal Liability Coverage—Pitfalls and Solutions
- Five Most Important Cases in Medicine and Law in 1978-1979

For further information, write:

**National Medicolegal Symposium 1979
American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610**

medicolegal



The evidence of experience

Since October 1974 when Motrin® (ibuprofen) was introduced in the United States, it has been used by more than 6,000,000 patients with rheumatoid arthritis* or osteoarthritis. Rarely has an ethical pharmaceutical product been prescribed for so many patients in so short a time. In addition, more than 450 studies presenting new data related to Motrin have been published.

The 6,000,000 patients already treated with Motrin is an objective measure of physicians' confidence in the ability of Motrin to relieve the pain and inflammation associated with rheumatoid arthritis and osteoarthritis.

So it is not surprising that in this short period Motrin has become the most frequently prescribed alternative to aspirin. Motrin relieves joint pain and inflammation as effectively as indomethacin or aspirin, but causes significantly fewer CNS and milder GI reactions. However, gastrointestinal bleeding, sometimes severe, has been associated with Motrin, aspirin, indomethacin, and other nonsteroidal antiarthritic agents.

*The safety and effectiveness of Motrin have not been established in patients with Functional Class IV rheumatoid arthritis (incapacitated, largely or wholly bedridden, or confined to wheelchair; little or no self-care).



Motrin[®] 400 mg TABLETS

ibuprofen, Upjohn

The confidence that comes from experience—
one more reason to prescribe Motrin.

Please turn page for a brief summary of prescribing information.

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

The confidence that comes from experience—
one more reason to prescribe

Motrin⁴⁰⁰ TABLETS

ibuprofen, Upjohn

Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. Aspirin used concomitantly may decrease Motrin blood levels. Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin (ibuprofen) is gastrointestinal (4% to 16%). This includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness*, headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Incidence: Unmarked 1% to 3%; *3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Suggested dosage is 300 or 400 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day.

How Supplied

Motrin Tablets, 300 mg (white)

Bottles of 60

Bottles of 500

NDC 0009-0733-01

NDC 0009-0733-02

Motrin Tablets, 400 mg (orange)

Bottles of 60

Bottles of 500

Unit-dose package of 100

Unit of Use bottles of 120

NDC 0009-0750-01

NDC 0009-0750-02

NDC 0009-0750-06

NDC 0009-0750-26

Caution: Federal law prohibits dispensing without prescription.

NIM-3

Upjohn

The Upjohn Company
Kalamazoo, Michigan 49001

Some
people
can't
see our
name.

Prevent
Blindness.

Every 12 minutes someone goes blind. Yet, half of all blindness is needless. Early eye care for children can correct amblyopia. Glaucoma can be arrested... sight lost to cataracts, restored. Blinding eye injuries can be dramatically reduced by safety precautions. These all add up to saving precious sight. For more information write: National Society for the Prevention of Blindness, 79 Madison Avenue, New York, NY 10016.



WHY SHOULD A PHYSICIAN BE CONCERNED ABOUT HOSPITAL MANAGEMENT?

Because we think it affects your patient's care.

Employee confidence in hospital management improves morale and attitude: two major prescriptions in the care your patients receive.

Shared Service Systems, a non-profit organization of over 90 health care institutions in the Midwest, can provide complete management for your facility including a highly trained administrator and back-up support if and when required.

At Shared Service Systems, our management philosophy is to provide effective modern management to your hospital so that your patients will continue to receive local, cost effective health services.

We thought you should know about us.

for more information
contact



SHARED SERVICE SYSTEMS
1725 So. 20th Street
Omaha, Nebraska 68108
or Phone: (402) 346-9008

KEEPING PATIENTS COMFORTABLE

KEEPING you MORE COMFORTABLE, TOO

When your patient is most comfortable, you are most effective.

Patient comfort, along with your comfort, are prime considerations in this examination table, available to you from Goetze-Niemer.

Places patients in the examination attitudes best for your work, with least discomfort for you.

Whether you are setting up your first office, or are ready to re-equip...whether you lease or buy, with time plans available...let Goetze-Niemer's helpful professionals work with you, providing the impression that you want to make to your patients.

GOETZE-NIEMER COMPANY

P.O. Box 136 — 1701 Brooklyn / Kansas City, MO 64141
Phone: 816-231-1900

HOSPITAL AND SURGICAL SUPPLIES—SINCE 1884



Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

AMA-CME COURSES

The American Medical Association will offer 21 regional scientific meetings for the continuing medical education of American physicians in 1979. The AMA has issued the AMA Continuing Medical Education 1979 Catalog, describing the many different courses offered to doctors during the year. Copies of the catalog are available from the American Medical Association.

Medical organizations in increasing numbers are making continuing medical education (CME) a requirement of membership, or state legislatures have made it mandatory, James H. Sammons, M.D., AMA executive vice president, points out.

The 1979 catalog also includes information on a number of new and innovative AMA programs, such as Videoclinics for hospital or home study, Hospital Medical Staff Training Seminars and Risk Management Seminars, Negotiations Seminars and Institutes.

The meetings will begin in January in California and Nevada and continue across the nation throughout the year, concluding with regional seminars in November in Louisiana and Kentucky and the winter scientific meeting in January 1980, in San Antonio.

Many physicians will utilize the AMA courses to earn credits toward the AMA Physician's Recognition Award, presented to physicians who have completed 150 hours of accredited CME over a three-year period.

Bronchodilator Therapy

(Continued from page 25)

Answers

1. b
2. c
3. d
4. a
5. c

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 7.75% per year and deduct the entire amount from your taxable income—even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment system to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insured safety.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

TOPEKA GREATER KANSAS CITY OLATHE
LAWRENCE MANHATTAN EMPORIA SALINA

"The Most Trusted Name In Savings"

THE UNIVERSITY OF KANSAS COLLEGE OF HEALTH SCIENCES AND HOSPITAL DIVISION OF CONTINUING EDUCATION

Symposia:

GYNECOLOGY AND OBSTETRICS IN THE 80'S

February 22 and 23, 1979

Guest Faculty:

ROBERT P. CARTER, M.D., University of North Dakota, Grand Forks.
RUDOLPH P. GALASK, M.D., University of Iowa College of Medicine, Iowa City.
CHARLES A. HUNTER, M.D., Indiana University School of Medicine, Indianapolis.
HARRY S. JONAS, M.D., University of Missouri-Kansas City School of Medicine.
HAROLD A. KAMINETZKY, M.D., College of Medicine and Dentistry of New Jersey, Newark.
LARRY L. McMULLEN, LL.B., firm of Blackwell, Sanders, Matheny, Weary and Lombardi, Kansas City, Missouri.

Subjects to be discussed will include: MEDICAL STUDENT AND RESIDENT EDUCATION IN OBSTETRICS AND GYNECOLOGY IN THE 80'S; GYNECOLOGIC SURGERY IN THE 80'S; GENETICS AND GENETIC COUNSELING IN THE PRACTICE OF OBSTETRICS AND GYNECOLOGY; THE FUTURE OF THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS; INFECTIOUS DISEASES IN OBSTETRICS AND GYNECOLOGY — INPATIENT CARE; FIRST AND SECOND TRIMESTER ABORTIONS; SURGICAL COMPLICATIONS OF PREGNANCY; HUMAN SEXUALITY AND TEENAGE PREGNANCY.

Accreditation:

American Medical Association: 16½ hours of Category I.
American Academy of Family Physicians: 16½ prescribed hours.

Registration Fee: \$85.00.

**For program announcements and information, write: DIVISION OF CONTINUING EDUCATION,
The University of Kansas College of Health Sciences and Hospital, Kansas City, Kansas 66103**

Sugar and Disease

T. S. DANOWSKI, M.D.

What is the role of sugars, if any, in malnutrition, overweight, diabetes mellitus, hypoglycemia and atherosclerosis?

Malnutrition

THERE IS NO EVIDENCE that sugar — whether sprinkled on grapefruit, stirred in coffee or tea, mixed in a dessert or eaten as a between meal snack — can cancel the nutritive value of a food or a perfectly adequate diet. Therefore, only when a refined sugar such as sucrose interferes with or replaces a normal diet does it become an inadequate food item and only then does it deserve the designation of "empty calorie" to indicate that it lacks vitamins, minerals, trace elements, etc. Under these circumstances, it can become the cause of nutritional deprivation.

Obesity

There are persons who overeat because they particularly enjoy sweets and cannot control their intake of desserts and other foods which contain carbohydrates. Their fundamental problem is an unregulated appetite and/or a poor or absent satiety response. However, there are obese persons who do not relish or who even avoid carbohydrates and sweets but, nonetheless, end up consuming an absolute or relative excess of wholesome foods.

In individuals whose caloric excess does and does not include carbohydrates and sugars, the obesity often defies a permanent solution. Intermittent but nonsustained losses of weight are often achieved by eliminating desserts, starches or sugars and, hence, to the uninitiated, it is the sugars and starches and not overeating that are blamed for the obesity. Their obesity carries with it the long-recognized risks of hypertension, atherosclerosis, gallbladder disease, arthralgia, depression and diabetes mellitus.^{1, 2}

Diabetes Mellitus

Does a high intake of carbohydrate, sugars or sucrose, in particular, initiate diabetes?

In the current scientific view, diabetes develops

Dr. Danowski is Chief of Medicine, Shadyside Hospital, and Clinical Professor of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania.

(Continued on page 37)

Tenuate® (diethylpropion hydrochloride NF)

Tenuate Dospan® (diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, hypertensive crises may result.

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecomastia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in the evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in the morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.

Cayey, Puerto Rico 00633

Direct Medical Inquiries to

MERRELL-NATIONAL LABORATORIES

Division of Richardson-Merrell Inc.

Cincinnati, Ohio 45215, U.S.A.

Licensor of Merrell®

References: 1. Citations available on request — Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

B-3921 (Y587A)

**Whether overweight is a
complicating factor...
or just uncomplicated overweight.**

Tenuate® Dospan®^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

Merrell



For prescribing information see opposite page.



EMPIRIN COMPOUND ̄ CODEINE

Each tablet contains: aspirin 227 mg, phenacetin 162 mg, and caffeine 32 mg, plus codeine phosphate in one of the following strengths: #4—60 mg (gr 1), #3—30 mg (gr 1/2), #2—15 mg (gr 1/4), and #1—7.5 mg (gr 1/8). (Warning—may be habit forming)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Sugar and Disease

(Continued from page 36)

largely in those older adults who become obese. Thus, diabetes in such persons is almost always accompanied by overeating. Once the fasting blood glucose reaches about 115 mg% in such persons, there is a delay in insulin release.³ At that point, the reversible hyperglycemia of obesity meets the criteria for diabetes; namely, undue and prolonged fasting and/or post-prandial hyperglycemia attributable to deficient insulin supplies or actions. Also, in such persons neither the hyperglycemia nor the release of insulin in response to food or enteric hormones produces the usual prompt suppression of hepatic glucose output.⁴ Moreover, insulin does not exert its usual glucose-lowering effect in the tissues.⁵

However, not all persons with severe life-long obesity develop diabetes. This raises the possibility that those who do become diabetic have pancreatic islets with a genetic or other predisposition to diabetes or that the islets have been damaged by an environmental factor such as a virus. To date, an inherited weakness of pancreatic islets and/or a susceptibility to viral cell damage to islets has been associated with several genetic patterns in loci A, B, C and D of chromosome 6 in the juvenile-onset diabetes only.⁶ There is little evidence of diabetes, *i.e.*, only 5 per cent or so, in the parents and siblings of those with the juvenile-onset and insulin-dependent type. This is not true of the three generation and other familial diabetes which appears in the later years of life and has a far more definite hereditary tendency. Thus, about one-half of patients with late adult-onset diabetes have siblings, parents and other close relatives with diabetes.⁷

Obviously, once diabetes is present, with or without obesity, overeating of protein, carbohydrate or sugars raises the blood sugar and, hence, the diabetic diet quite appropriately restricts the total calories including those from carbohydrates. Sucrose is restricted only because it precludes the use of other palatable and nutritious carbohydrates. It is to be noted, however, that in some patients with treated diabetes, increasing the carbohydrate intake improves the insulin response to food.⁸

In most instances of obesity-related diabetes, even a limited but sustained weight loss diminishes or eliminates the diabetes as long as the weight loss persists.⁹ Hence, this late adult-onset diabetes is related to the excess of body fat resulting from a relative or absolute excess of caloric intake irrespective of the proportions of protein, fat and carbohydrate.

Uncontrolled hyperglycemia may be responsible

for: (a) accelerated atherosclerosis, coronary heart disease and strokes; (b) universal thickening of capillary basement membranes with resultant retinopathy and renal glomerulosclerosis and perhaps idiopathic cardiomyopathy; and (c) the neuropathies of diabetes mellitus.¹⁰ Also, high blood sugar levels may be the cause of a legion of other aberrations in diabetes. The length of the list precludes citation.

The above changes are most prevalent in insulin-dependent diabetes, an entity in which precise control of the blood sugar is almost never achieved by current insulin and diet regimens and may require self-measurement of blood glucose and 4 daily doses of insulin.¹¹ There is no evidence, however, that dietary carbohydrates play a key role in this intransigent type of hyperglycemia.

Hypoglycemia

Carbohydrates have also been blamed for low blood sugar. There are two types of hypoglycemia, fasting and reactive. Fasting hypoglycemia is rare, while reactive hypoglycemia is most often a normal response in a healthy person. Fasting hypoglycemia results from one or more of six disturbances of glucose homeostasis.¹² It results from: starvation in newborns and occasionally in adults, malabsorption of carbohydrates or their precursors, decreases in liver glycogen or its release, decreased formation of glucose by the liver, increased glucose utilization not attributable to insulin and increased glucose utilization as a result of insulin excesses. Hence, none of the above stated causes of fasting hypoglycemia can be ascribed to excess carbohydrate or to sucrose.

The reactive type of hypoglycemia indicates a reaction to the ingestion of food (including sugar). Three mechanisms may contribute to reactive hypoglycemia: transient delays in liver glucose output when the blood sugar returns to normal, transient delays in the clearance of insulin secreted in response to food or sugar, and transient delays in or absence of counter-regulation by glucagon, cortisol, growth hormone and/or epinephrine. Such reactive hypoglycemia can occur in persons with: a perfectly normal glucose tolerance, glucose intolerance of the chemical diabetes type and especially with a lag tolerance curve or a flat glucose tolerance.

Reactive hypoglycemia is usually entirely without symptoms and is a variation of normalcy, occurring in 20 per cent of non-obese and 30 per cent of obese control subjects.¹³ It may produce symptoms appropriate to a low blood sugar including transient hunger, lightheadedness, palpitations and sweating. This is more apt to occur with the lag type of chemical diabetes. However, there are some persons in

whom the symptoms and signs of reactive hypoglycemia trigger a ripple effect of fatigue, emotional depression or "sinking feelings." These ripple effects cannot be attributed to low blood sugar because they are not relieved by sugar and continue long after the blood sugar has returned to normal. Such ripple effects are more frequent in persons with difficulties in coping with or resolving school, marital, job, sex, aging or other problems.¹²

There are some therapists and persons who point to reactive hypoglycemia as the cause of ripple effects but there is no evidence for this. However, when the low blood sugar triggers the ripple effect, a low carbohydrate-high protein diet affords variable relief. Those with a ripple syndrome also require gentle, considerate and wise management and counseling in addition to restriction of carbohydrate and sucrose. Undue emphasis on carbohydrates, particularly sugars, and sucrose defers attention to underlying chemical diabetes or emotional problems in complicated lives.¹²

Therapy in those with chemical diabetes should include weight loss in the obese and other measures to return glucose tolerance to normal.

Atherosclerosis

It is true that both diabetes and obesity due to caloric excesses (be they of carbohydrate or other origin) predispose persons to high plasma cholesterol, high Low Density Lipoprotein (LDL) cholesterol, low High Density Lipoprotein (HDL) cholesterol and to high plasma Very Low Density Lipoprotein (VLDL) triglyceride levels.¹⁴ However, only in the last of these, hypertriglyceridemia, can the intake of carbohydrates, including sucrose or other sugars, play a specific role, *i.e.*, a role apart from caloric excesses. Thus, some persons are sensitive to a high carbohydrate intake and develop a carbohydrate-induced hypertriglyceridemia while others are related to a high fat intake.¹⁵

The frequency of atherosclerosis is increased by obesity and diabetes, neither of which is directly related to sugar intake. Even in the case of the specific carbohydrate-induced hypertriglyceridemia, it is not possible to draw a clear cause and effect relationship between atherosclerosis and hypertriglyceridemia and sucrose intake. In women, high triglyceride levels of any origin significantly increase the frequency of vascular events including coronary heart disease, myocardial infarctions or strokes. In males, however, hypertriglyceridemia is not a risk factor with respect to vascular catastrophes

unless hypertension, smoking and/or glucose intolerance are present.¹⁶ Hence, in carbohydrate-induced hypertriglyceridemia, gender also plays a key role in determining susceptibility to vascular disease.

Summary

Absolute or relative calorie excess contributes to obesity, diabetes, hypoglycemia and atherosclerosis. Carbohydrates are one source of calories and are frequently overconsumed. However, sucrose intake in moderation does not directly cause atherosclerosis, diabetes, hypoglycemia or even obesity.

References

1. Danowski, T. S., *Sustained Weight Control: The Individual Approach*, F. A. Davis Co., Philadelphia, PA, Edition II, 1973.
2. Danowski, T. S. and Winkler, A. W., Obesity as a Clinical Problem, *Am. J. Med. Sci.* 208:622, 1944.
3. Brunzell, J. D., et al. Relationships Between Fasting Plasma Glucose Levels and Insulin Secretion During Intravenous Glucose Tolerance Tests, *J. Clin. Endocr. Metab.* 42:222, 1976.
4. Felig, P., et al. Splanchnic Glucose and Amino Acid Metabolism in Obesity, *J. Clin. Invest.* 53:582, 1974.
5. Butterfield, W. J. H., The Effects of Phenformin on Peripheral Glucose Utilization and Insulin Action in Obesity and Diabetes Mellitus, *Ann. N. Y. Acad. Sci.* 148:724, 1968.
6. Illeni, M. T. et al. HLA Antigens in Diabetic Children, *Diabetes* 26:870, 1977.
7. Tattersall, R. B. and Fajans, S. S., A Difference Between the Inheritance of Classical Juvenile-Onset and Maturity-Onset Type of Diabetes of Young People, *Diabetes* 24:44, 1975.
8. Reaven, G. M. and Odefsky, J. M., Increased Plasma Glucose and Insulin Response to High-Carbohydrate Feedings in Normal Subjects, *J. Clin. Endocr.* 38:151, 1974.
9. Ahmad, U., et al. Remissions of Diabetes Mellitus After Weight Reduction by Jejunoileal Bypass, *Diabetes Care* 1:158, 1978.
10. Pirart, J., Diabetes Mellitus and Its Degenerative Complications: A Prospective Study of 4,400 Patients Observed Between 1947 and 1973, *Diabetes Care* 1:168, 1978.
11. Danowski, T. S., Jet Injection of Insulin During Self-Monitoring of Blood Glucose, *Diabetes Care* 1:27, 1978.
12. Danowski, T. S., *The Hypoglycemia Syndromes*, Harper Press, Pittsburgh, PA, 1st ed., 1978.
13. Jung, Y. et al. Reactive Hypoglycemia in Women. Results of a Health Survey, *Diabetes*, 20:428, 1971.
14. Reckless, J. P. D., et al. High-Density and Low-Density Lipoproteins and Prevalence of Vascular Disease in Diabetes Mellitus, *Brit. Med. J.*, 1:883, 1978.
15. Ahrens, E. H., et al. Carbohydrate-Induced and Fat-Induced Lipemia, *Trans. Assoc. Am. Phys.* LXXIV: 134, 1961.
16. Castelli, W. P., Mortality Significance of Hypercholesterolemia and Hypertriglyceridemia, *Trans. Assoc. Life Ins. Med. Dir. Am.*, 58:272, 1975.

Reprinted with permission from *Contemporary Nutrition* Volume 3, No. 12, December, 1978.

contains no aspirin

tablets

Darvocet-N[®] 100 (IV)

100 mg. Darvon-N[®] (propoxyphene napsylate)
650 mg. acetaminophen

100



700565

*Additional information available
to the profession on request from
Eli Lilly and Company
Indianapolis, Indiana 46206*

Eli Lilly and Company, Inc.
Carolina, Puerto Rico 00630

INDEX TO ADVERTISERS

Beltone Electronics Corporation	7
Burroughs Wellcome Co.	36b
Capitol Federal Savings & Loan Ass'n	35
Goetze-Niemer Company	33
P. W. Hanicke Manufacturing Company	10
Lattimore-Fink Laboratories	6
Eli Lilly Company	39
Medical Protective Company	6
The Menninger Foundation	3
Merrell-National Laboratories	4a, 8b, 9, 10, 36, 36a
Midwest Pension Planners	1
Munns Medical Supply	3
Pfizer Laboratories	5
PVO International	4
Roche Laboratories	2, 4b, C3, C4
Shared Service Systems	33
Smith Kline & French	8a
The Upjohn Company	32b, 32c, 32d

Month in Washington

(Continued from page 8)

\$400 million authorization. The American Nurses Association said his action was "discriminatory" and "short-sighted."

The measure had passed the Senate by a unanimous voice vote and was approved by a 393-12 House tally. President Carter previously had vetoed a measure that would have cut off nurses' education aid, but Congress later overrode the veto.

In a brief message, Carter said prospects are for sufficient nurses without the need for federal support. "At a time of urgent need for budget restraint we cannot tolerate spending for any but truly essential purposes," the President said.

A member of the Federal Trade Commission has said the Commission has uncovered a "litany of abuses and of chicanery in the nursing home industry that is too large to ignore," and may propose a crackdown.

"Our preliminary investigation at the FTC revealed instances in which a nursing home was charging drug prices 24 per cent higher than those charged by independent pharmacies," said Elizabeth Dole.

Mrs. Dole, wife of Senator Robert Dole (R-Kans.) told the 1978 Indiana Governor's Conference on Aging that the Commission is considering issuing a trade regulation rule for the industry to require, among other things, exact disclosures of prices and services.

The Health Maintenance Organization (HMO) program, one of the few major health bills of the last

CLASSIFIED ADVERTISEMENTS

TENNIS COURT . . . gazebo, patios, and many trees enhance a beautiful home by Lake Olathe. Moving to Arizona. Four bedrooms, 3½ baths, sunken living room. Adjacent golf, swimming, water skiing, fishing, and horses. Upper bracket, by owner. Adjacent acreage optional. Call Dr. Harned, (913) 764-2110.

HEAD STAFF PHYSICIAN — Immediate opening in a progressive residential 420-bed facility for the mentally retarded in Topeka, Kansas. May practice in state institution for two years with ECFNG — salary \$24,000; with Kansas license or FLEX — \$32,000-\$42,000 negotiable according to qualifications. No night or weekend duties. Send vita to Dr. Samuel Sevier, Clinical Director, Kansas Neurological Institute, 3107 W. 21st Street, Topeka, KS 66604.

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the JOURNAL.

FOR SALE: Soundscribe equipment — three recorders, two transcribers in working order. Best offer. Contact the Kasas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

Mid-America Cancer Center Program seeking Associate Director for Cancer Outreach. Experience in clinical aspects of cancer, education, and community relations. Contact James T. Lowan, M.D., Director, Mid-America Cancer Center, KUMC, 39th & Rainbow, Kansas City, KS 66103.

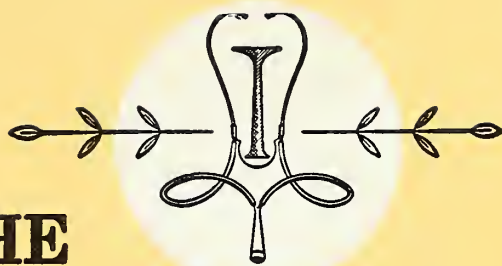
NEBRASKA: New hospital emergency department ready to expand to full time coverage. Hours Monday-Friday; no weekends. Two physicians needed for week day/night emergency department coverage. Excellent income plus benefits. Reply to Box 1-0179 in care of the Journal.

congressional session to secure enactment, has been signed into law by President Carter. The measure, a prime goal of the Administration, provides a three-year extension, with certain amendments to the HMO proposals.

The bill authorizes \$31 million, \$65 million, and \$68 million for the next three fiscal years. The maximum amount of an initial development grant that can be made was increased from \$1 million to \$2 million beginning in fiscal year 1980.

The government can make loans and loan guarantees for the acquisition or construction of ambulatory health care facilities and for the acquisition of equipment. Loan guarantees to private HMOs can only be for projects that will serve medically underserved populations. The loans made or guaranteed for an ambulatory health care facility cannot be more than \$2.5 million. An ambulatory health care facility was defined to mean a health care facility for the provision of diagnostic, treatment, and prevention services to ambulatory patients.

The bill provides that beginning four years after an HMO becomes qualified it may not enter into contracts with physicians other than members of the HMO staff, medical groups, or individual practice associations if the amounts paid under these contracts for basic and supplemental health services provided by physicians exceed 15 per cent of the total estimated amount to be paid by the HMO to physicians for the provision of basic and supplemental physician services. The percentage is increased to 30 per cent if the HMO principally serves a rural area.

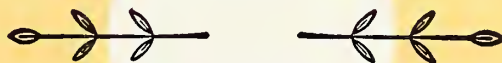


THE
Journal
OF THE
Kansas
Medical
Society

LIBRARY
U.C. SAN FRANCISCO

MAR 6 1979

FEBRUARY
1979



(ISSN 0022-8699)

VOL. LXXX
NO. II

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for February

Scientific Articles

- Fourier/Dirichlet: Modeling of Bone Ultrastructural Surfaces
— Anthony E. Francis, M.D.; Joe J. Lin, M.D., and
H. O. Marsh, M.D., Wichita 49
- Bladder Cancer: The Role of Radiation Therapy — Carl M.
Mansfield, M.D.; Eashner K. Reddy, M.D., and Gerald
V. Hartman, M.D., Kansas City, Kansas 54
- Waldenström's Macroglobulinemia: Pleuropulmonary Man-
ifestations — E. David Kirk, M.D., Wichita 57
- Bacterial Endocarditis: Mitral Valve Syndrome — Chi-Ping
Yang, M.D., Topeka 60

Current Comment

- Breast Cancer Management — Ronald L. Stephens, M.D.,
Kansas City, Kansas 62

Socio-Economics

- Tips on Submitting Health Insurance Claims 66
- Legal and Tax Trends: Leasing Your Employees? 67
- The Duty of Hospitals and Hospital Medical Staffs to Regulate
the Quality of Patient Care 75

Miscellaneous

- Advertisers 88
- Auxiliary News 48
- Classified Advertisements 88
- Editorial Comment: "Let there be truth — " 69
- Impaired Physician Program Resource List 73
- Information for Authors 46
- New Members 74
- Obituaries 72
- Personalities 88
- President's Message 68
- Vox Dox 71

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; **Editorial Assistant:** Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Second-class postage paid at Topeka, Kansas and at additional mailing offices. **Non-Responsibility:** Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns. Printed by The Ovid Bell Press, Inc., Fulton, Missouri.

What will your present pension plan

COST YOU **this year?**

Are you presently under a Keogh plan which limits your contribution to \$7500 yearly?

If you are — that plan may be **COSTING YOU MONEY.**

We offer Defined Benefit Keogh Plans with contribution limits of up to \$18,000 . . . plans which allow you the flexibility you need.

Take a long look at your present plan — then give us the opportunity to show you how our plan can save you money.

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



John E. Lyons
MIDWEST PENSION PLANNERS

Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913/235-5305

PERFORMANCE. PROVEN EFFECTIVENESS WITHIN A WIDE SAFETY MARGIN.



Proven performance within a wide safety margin. Basically, that's what Librium is all about.

LIBRIUM® chlordiazepoxide HCl/Roche THE ANXIETY-SPECIFIC

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states. Efficacy beyond four months not established by systematic clinical studies. Periodic reassessment of therapy recommended.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malforma-

tions as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

While Roche Laboratories already knows more about the performance of Librium than anyone else, we keep on learning every day.

For example, the highly favorable benefits-to-risk ratio of Librium is a well-documented matter of record.

And, of course, the specific calming action of Librium has been demonstrated in millions of patients around the world. In a large number of these patients, Librium was used concomitantly with other primary medications.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.



Roche Products Inc.
Manati, Puerto Rico 00701

THE KANSAS MEDICAL SOCIETY

1979 Workshops for Medical Office Personnel

Kansas City, Kansas — Kansas City Towers, Holiday Inn: May 15, 16 and 17

Wichita, Kansas — The Wichita Royale: June 19, 20 and 21

TEAM BUILDING — A Better Way to Supervise (full day workshop):

- Recruiting, interviewing, and selecting employees
- Developing meaningful job descriptions, personnel policy hand-book
- Motivating and coaching employees to be "key players"

- Job performance review, terminating an employee, and salary review
- Better communications for effective staff meetings and training
- The workshop is designed for persons who are presently in a supervisory or management position.

Approved for .6 CEU credit

Fee \$75.00

MEDICAL COLLECTION MANAGEMENT — A half-day workshop covering:

- Written collection policies
- Collection letters
- Collection timetable
- Collection laws
- Accounts receivable — aging record

- Insurance follow-up procedures
- Telephone collecting
- How to collect at the time of service
- A presentation by a professional medical collector

Approved for .2 CEU credit

Fee \$25.00

TIME MANAGEMENT AND APPOINTMENT SCHEDULING — Because of the desirability of the physicians attending this particular session, it has been scheduled for presentation in the evening. The 3-hr program will cover the following:

- Objectives of an appointment schedule
- Analyzing your appointment schedule
- Newest type of appointment scheduling — modified wave
- Effective handling of work-ins, no-shows, and walk-ins

- Managing the call-backs
- Reminder and recall system
- Referral, lab and X-ray, surgical and hospital appointments
- Developing your own appointment book

Approved for .2 CEU credit

Fee \$25.00

YOU, THE TELEPHONE MANAGER — This half-day program presented on Thursday morning will cover the following:

- Patient information booklet
- Patient relations — better communications
- Legal pitfalls

- Current telephone company equipment and services
- Medical emergencies
- Techniques to reduce non-productive calls

Approved for .2 CEU credit

Fee \$25.00

Each participant will receive a kit that is used during the presentation; Excellent how-to-do forms and pamphlets to take back to the office will be included. Enrollment for all sessions is limited. Luncheon will be served on Tuesday. Coffee breaks will be provided with each session. *Please complete and return the registration form without delay.*

REGISTRATION FORM

To: The Kansas Medical Society
Attention: Mrs. Val Braun
1300 Topeka Avenue
Topeka, Kansas 66612

(Telephone: 913-235-2383)

Please reserve _____ place(s) for the following:

TEAM BUILDING WORKSHOP:

_____ Kansas City Towers Holiday Inn: Tuesday, May 15, 8:00 A.M.-5:00 P.M.
_____ Wichita Royale: Tuesday, June 19, 8:00 A.M.-5:00 P.M.

\$75.00

MEDICAL COLLECTIONS WORKSHOP:

_____ Kansas City Towers Holiday Inn: Wednesday, May 16, 8:30 A.M.-Noon
_____ Wichita Royale: Wednesday, June 20, 8:30 A.M.-Noon

\$25.00

TIME MANAGEMENT WORKSHOP:

_____ Kansas City Towers Holiday Inn: Wednesday, May 16, 6:30 P.M.-9:30 P.M.
_____ Wichita Royale: Wednesday, June 20, 6:30 P.M.-9:30 P.M.

\$25.00

TELEPHONE MANAGEMENT AND APPOINTMENT SCHEDULING WORKSHOP:

_____ Kansas City Towers Holiday Inn: Thursday, May 17, 8:30 A.M.-Noon
_____ Wichita Royale: Thursday, June 21, 8:30 A.M.-Noon

\$25.00

Registration fee — Total \$_____ is enclosed.

Attending will be:

Name: _____ Employed by: _____

Address: _____

Accept no substitute for your professional judgment

As a physician, you have the right to prescribe the drug which you believe will most benefit your patients. Now, substitution laws make it more difficult to exercise that right. In many states, unless you specifically direct pharmacists to dispense your brand-name prescription as written, they may be required by law to substitute another drug for your brand-name prescription.

This means that the ultimate drug selection is no longer yours; its source is left to the pharmacist's discretion. You will have forfeited your right to prescribe as you see fit. Preserve your rights. Specify that you will accept no substitution.

When you accept no substitutes...

- You ensure that your patient receives exactly that product you have specified on your prescription
- You choose the quality of the product dispensed to your patient
- You can exercise the right to select a product based upon its proven therapeutic performance and to select a manufacturer that stands behind its brand name or generic product
- You can support the kinds of research programs that are vital to new drug discovery and development
- You can help sustain important physician, pharmacist and patient education services supported by innovative, research-oriented firms

For complete information on the drug substitution law effective in your state, please consult your local Pfizer Representative.



Dyazide®

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Makes Sense in Hypertension*

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

*** Warning**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spiro-lactone is used concomitantly, determine serum K⁺ frequently; both can cause K⁺ retention and elevated serum K⁺. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions, nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 and 1000 capsules, Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
a SmithKline company

Carolina, P.R. 00630

**When painful spasm
is the presenting
symptom...**



in functional G.I. disorders*

Bentyl[®]

(dicyclomine hydrochloride USP)

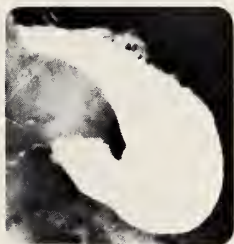
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects[†]

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating certain functional G.I. disorders.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl®

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection
AVAILABLE ONLY ON PRESCRIPTION.

Brief Summary INDICATIONS

For use as adjunctive therapy in the treatment of peptic ulcer.
IT SHOULD BE NOTED AT THIS POINT IN TIME THAT THERE IS A LACK OF CONCURRENCE AS TO THE VALUE OF ANTICHOLINERGICS/ANTISPASMODICS IN THE TREATMENT OF GASTRIC ULCER. IT HAS NOT BEEN SHOWN CONCLUSIVELY WHETHER ANTICHOLINERGIC/ANTISPASMODIC DRUGS AID IN THE HEALING OF A PEPTIC ULCER, DECREASE THE RATE OF RECURRENCES, OR PREVENT COMPLICATION.

Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, FDA has classified the following indications as "probably" effective.

May also be useful in the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis, acute enterocolitis, and functional gastrointestinal disorders); and in neurogenic bowel disturbances (including the splenic flexure syndrome and neurogenic colon).

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloro-duodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis, toxic megacolon complicating ulcerative colitis, myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with autonomic neuropathy, hepatic or renal disease, ulcerative colitis—Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon, hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension, hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

It should be noted that the use of anticholinergic/antispasmodic drugs in the treatment of gastric ulcer may produce a delay in gastric emptying time and may complicate such therapy (antral stasis). Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention, blurred vision and tachycardia, palpitations, mydriasis, cycloplegia, increased ocular tension, loss of taste, headache, nervousness, drowsiness, weakness, dizziness, insomnia, nausea, vomiting, impotence, suppression of lactation, constipation, bloated feeling, severe allergic reaction or drug idiosyncrasies including anaphylaxis, urticaria and other dermal manifestations, some degree of mental confusion and/or excitement, especially in elderly persons, and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg capsule and syrup: Adults 1 or 2 capsules or teaspoonfuls syrup three or four times daily. Children 1 capsule or teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg Adults 1 tablet three or four times daily. Bentyl Injection: Adults 2 ml (20 mg) every four to six hours intramuscularly only. **NOT FOR INTRAVENOUS USE.** **MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, anticholinergic agents such as Urecholine® (bethanechol chloride USP) should be used.

Product information as of October, 1976

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All units of measure must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of letter-size paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

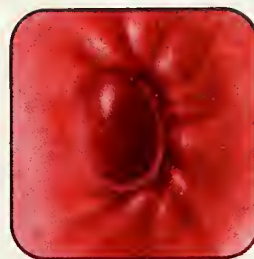
Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

Merrell

MERRELL NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

For hemorrhoids and other anorectal conditions



External hemorrhoids



Internal hemorrhoids



Pruritus ani



Proctitis



Anal fissures



Easy to handle,
easy to insert,
comfortably shaped—
Rx only

Easy to apply,
nonstaining—
Rx only

Prescribe **Anusol-HC[®]** Suppositories/Cream for symptomatic relief

- Effectively reduces inflammation and edema
- Rapidly relieves pain and itching

ANUSOL-HC[®] SUPPOSITORIES

Hemorrhoidal Suppositories

ANUSOL-HC[®] CREAM

Rectol Cream with Hydrocortisone Acetate

CAUTION: Federal law prohibits dispensing without prescription.

Description: Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: bismuth subiodide, calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, bismuth subiodide, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Indications: Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas and relief of local pain and discomfort following anorectal surgery.

Anusol-HC Cream is also indicated for pruritus ani. Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol-HC[®] Suppositories or Ointment.

Contraindications: Anusol-HC[®] Suppositories and Anusol-HC[®] Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation.

Warnings: The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts, or for prolonged periods of time.

Precautions: Symptomatic relief should not delay definitive diagnoses or treatment. If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

Anusol-HC is not for ophthalmic use.

Dosage and Administration: Anusol-HC Suppositories—Adults: Remove foil wrapper and insert suppository into the anus. One suppository in the morning

and one at bedtime, for 3 to 6 days or until inflammation subsides. Then maintain patient comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain patient comfort with regular Anusol Ointment.

NOTE: If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

How Supplied: Anusol-HC Suppositories—boxes of 12 (N 0047-0089-12) and 24 (N 0047-0089-24); in silver foil strips with Anusol-HC W/C printed in block.

Anusol-HC Cream—one-ounce tube (N 0047-0090-01); with plastic applicator, detachable label.

Store between 15°-30° C (59°-86° F).

Full information is available on request.



Warner/Chilcote

Division, Warner-Lambert Company
Morris Plains, N.J. 07950

AN-GP-91

The professional source of anorectal comfort



Auxiliary News

An Open Letter to All the Physicians of Kansas

On January 15, 1979, I received the following unsigned letter:

Mrs. Crouch,

I have recently heard several comments from more than one source in regard to the recent medical marriage questionnaire which I find disturbing. I feel these questions need a full answer from you in the next communication which will be sent to Kansas auxiliary members.

One comment is that these questionnaires were secretly coded as to county.

Another is that they were marked in such a way, the person answering could be identified by means of invisible markings.

My husband informed me that he has served on a review board where they were able to identify respondents to a survey.

If I am hearing these comments, I would assume others are also and that some clarification is therefore mandatory.

I sincerely believe that the implications are serious and that an open reply is indicated. We have repeatedly emphasized that the questionnaire is completely anonymous. Let me again start at the beginning.

All programs of the Auxiliary are under the direction or the approval of the KMS Executive Committee. Hence, the questionnaire was reviewed and approved by the Kansas Medical Society. Questionnaires were mailed to all members of the Auxiliary, and as they were returned to us they were removed from the envelopes and the envelopes were destroyed. There is no code of any kind on the questionnaire nor is there any invisible marking of any kind. Had there been, I personally would have refused to allow the mailing of the questionnaire. None of us is in the least bit interested in who filled out and returned which one. In fact, everyone prefers not to know.

The sole purpose of the survey was to aid in the preparation of programs — primarily for medical students and intern and resident spouses — relating to problems that are peculiar to the medical marriage. This may mean helping in the transition from the academic world of medicine in a large metropolitan setting to the actual practice of medicine, perhaps in a small community. It may be learning to handle living the “goldfish bowl existence” of a physician’s family; perhaps it will be learning to fully understand the stress of our physician spouses when they assume the full responsibility for the life of a patient; maybe it will be seemingly simple things such as: how do we get the children to behave when the phone rings every five minutes (without blowing our cool); how do we handle the realization that the patient must come first in the life of the physician-spouse; finances; demands from the community on our time; etc. etc. The need for such education is unquestionable.

The concern which sparked the development of the total program is genuine — born out of love for physicians, their family, their profession, and the people they serve. I am greatly disturbed that the integrity of those involved in the survey has been questioned. I can only hope that you will accept my word that there is no coding, no marking of any kind on the questionnaire.

Since the letter I received was unsigned, I could not answer it personally, but this reply will also appear in the next issue of our Auxiliary publication, *Communique from KMSA*.

Thank you for your indulgence, patience, and support.

Sincerely,
Jean Crouch
President
Kansas Medical Society Auxiliary

The Great Laxative Escape



COLACE[®]
dioctyl sodium sulfosuccinate

Colace means escape—from laxative stimulation, from laxative harshness, from laxative habit. Colace gently helps soften stools for easy, painless, unstrained elimination. It's the great laxative escape, from infancy to old age. Available in 100 and 50 mg. capsules. Syrup or liquid.

Mead Johnson
PHARMACEUTICAL DIVISION

©1978 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. J578-1

This asthmatic isn't worried about his next breath...

**he's active
he's effectively
maintained on**

QUIBRON[®]

Each capsule or tablespoonful (15 ml) liquid contains theophylline (anhydrous) 150 mg and glyceryl guaiacolate (guaifenesin) 90 mg

- theophylline for effective around-the-clock bronchodilator therapy
- 100% free theophylline

Indications: For the symptomatic relief of bronchospastic conditions such as bronchial asthma, chronic bronchitis, and pulmonary emphysema

Warnings: Do not administer more frequently than every 6 hours, or within 12 hours after rectal dose of any preparation containing theophylline or aminophylline. Do not give other compounds containing xanthine derivatives concurrently.

Precautions: Use with caution in patients with cardiac disease, hepatic or renal impairment. Concurrent administration with certain antibiotics, i.e., clindamycin, erythromycin, troleandomycin, may result in higher serum levels of theophylline. Plasma prothrombin and factor V may increase, but any clinical effect is likely to be small. Metabolites of guaifenesin may contribute to increased urinary 5-hydroxyindoleacetic acid readings, when determined with nitrosonaphthol reagent. Safe use in pregnancy has not been established. Use in case of pregnancy only when clearly needed.

Adverse Reactions: Theophylline may exert some stimulating effect on the central nervous system. Its administration may cause local irritation of the gastric mucosa, with possible gastric discomfort, nausea, and vomiting. The frequency of adverse reactions is related to the serum theophylline level and is not usually a problem at serum theophylline levels below 20 mcg/ml.

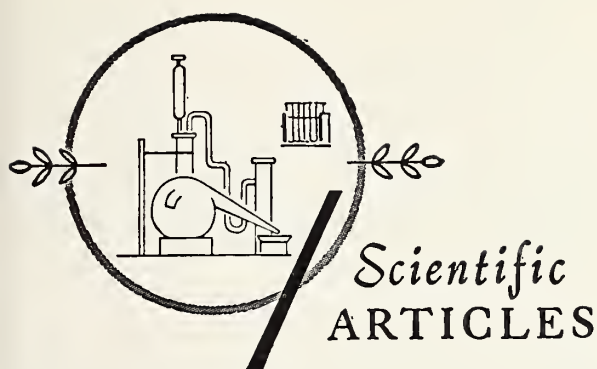
How Supplied: Capsules in bottles of 100 and 1000 and unit-dose packs of 100; Liquid in bottles of 1 pint and 1 gallon.

See package insert for complete prescribing information.

Mead Johnson

PHARMACEUTICAL DIVISION

© 1979 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. MJL 6-4220R4



Fourier/Dirichlet

Modeling of Bone Ultrastructural Surfaces

ANTHONY E. FRANCIS, M.D.;* JOE J. LIN, M.D.;† and
H. O. MARSH, M.D.,‡ *Wichita*

A STUDY utilizing the cooperative efforts of the Departments of Orthopedic Surgery and Pathology of St. Francis Hospital, Wichita, has sought to investigate the ultrastructural characteristics of diseased and normal bone. This effort has been aided by the ability to perform transmission electron microscopy at the hospital. As an outgrowth of this study, an attempt to devise a mathematical model that would "map" the surface of the bone as observed under the electron microscope seemed an appropriate goal.

Ideally, this model would be an accurate representation of the morphology of bone ultrastructure without requiring excessive mathematical manipulation. Also, the model should be in a form that could be transformed to existing electronic circuitry (*i.e.*, computers) using analog, digital, or hybrid techniques.

The repeating patterns of bone observed under the electron microscope seemed an ideal situation in which to apply the transform calculus methods of Fourier. Unfortunately, the methods of Fourier lack rigorous mathematical proof in certain situations.

The repeating patterns of bone ultrastructural surfaces as viewed under the electron microscope lend themselves well to mathematical translation. A model is described using the transform calculus methods of Fourier under the special conditions established by Dirichlet. This model can be expanded to allow computer modeling of the bone surface.

Indeed, mathematicians have spent the greater part of two centuries trying to place the assumptions of Fourier on a solid footing. This situation was resolved by utilization of the well accepted techniques of the mathematics of sinusoidal excitations common to the problems of electrical engineering. This allowed the use of calculus, which has been proved to be valid in physical situations, and to avoid the need to prove every step in a new mathematical area.

Ultrastructural Characteristics of Bone

Many investigators have explored the ultrastructure of bone.¹⁻³ Bone is composed of many components. However, much of the research of the recent past has centered on the morphology of collagen fibers and crystalline hydroxyapatite. *Figure 1* illustrates an electron micrograph from a section of nor-

* Resident in Orthopedic Surgery.

† Department of Pathology.

‡ Department Chairman, Department of Orthopedic Surgery.

From the departments of Pathology and Orthopedic Surgery, St. Francis Hospital, Wichita.

Address reprint requests to Dr. Francis, Department of Orthopedic Surgery, St. Francis Hospital, Wichita, KS 67214.

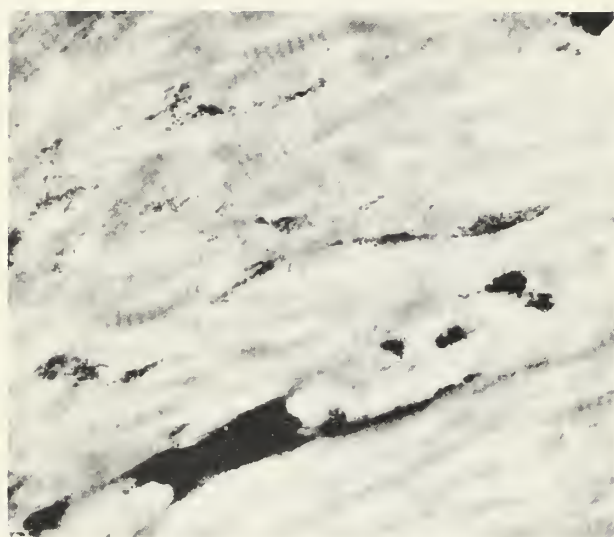


Figure 1. Electron micrograph from a section of normal bone taken from the iliac crest. Magnification 25,000 \times .

mal bone taken from the iliac crest. The magnification is 25,000 \times . Numerous repeating light and dark areas can be observed. These areas correspond to collagen fibers (light) and hydroxyapatite deposition (dark). The larger black areas are artifacts that are probably aggregations of calcium and osmium tetroxide.

Crystallography has shown that collagen has an axial periodicity of 640-700 Angstroms. This means that the collagen fibers "repeat" (at least in terms of crystallography) every 640-700 Angstroms. (An Angstrom is the approximate measure of the Hydrogen atom radius.) Also present in the bone ultrastructure are "hole zones." These zones correspond to areas of hydroxyapatite deposition. This orientation of collagen and hydroxyapatite is demonstrated in Figure 2. The arrows represent collagen macromolecules. The squares represent the hole zones. This crystallographic picture has been found to correlate well with electron micrographs of embryonic chick bone.¹ Our own studies of mature, normal

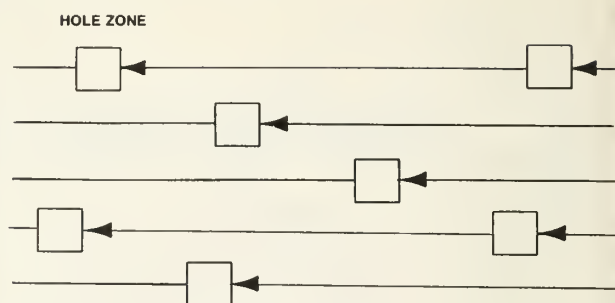


Figure 2. Ultrastructural organization of bone. Arrows represent collagen macromolecules. Squares represent "hole zones" which are areas of hydroxyapatite deposition.

bone have also been found to be in agreement with this arrangement. Referring back to Figure 1, the light areas are collagen fibers (arrows in Figure 2). The dark areas of hydroxyapatite are the hole zones (squares in Figure 2).

Collagen fibers have great tensile strength as well as being relatively inelastic and resistant to compression. Hydroxyapatite is very strong, but is brittle in nature. The combining of these two dissimilar substances gives bone strength with some elastic qualities. This situation is somewhat similar to the arrangement of metal rods in building cement. The metal rods (collagen) give elastic protection to the cement (hydroxyapatite) which has great strength, but is brittle. Some of the characteristics of collagen are listed in Table I. Some of the proposed crystalline formulae of hydroxyapatite are listed in Table II.

Figure 3 shows the dimensions of bone ultrastructural components in the morphologic system shown in Figure 2. This somewhat arbitrary arrangement has been devised by previous investigators.^{1,2} A unit length of one is assigned to the axial periodicity of collagen macromolecules (640-700 Angstroms). Following this pattern, the collagen macromolecules have a length of 4.4 units (this is the space between the hole zones). The hole zones

TABLE I
CHARACTERISTICS OF COLLAGEN

Axial periodicity 640-700 Angstroms
High glycine content
High imino acid content
High alanine content
Low aromatic content
No cysteine

TABLE II
PROPOSED CRYSTALLINE FORMULAE OF
HYDROXYAPATITE

$\text{Ca}^{++}_{10-x}(\text{H}_3\text{O}^+)_{2x}(\text{PO}_4)_6(\text{OH}^-)_2$
$\text{CaHPO}_4(\text{H}_2\text{O})_2$
$\text{Ca}_3(\text{PO}_4)_2(\text{H}_2\text{O})_3$
$\text{Ca}_8\text{H}_2(\text{PO}_4)_6(\text{H}_2\text{O})_5$

Figure 3. Dimensions of bone ultrastructural components. Collagen macromolecules measure 4.4 units while "hole zones" measure 0.6 units.

Proposed Mathematical Problem

The function will be zero for 4.4 units (length of the collagen macromolecules) and a unit value for 0.6 units (hole zones). This pattern should repeat itself indefinitely. The proposed function is described as follows:

$$f(x) \begin{cases} = 0 & \text{when } (x = 0 \text{ to } x \leq 4.4 \text{ units}) \\ = 1 & \text{when } (x = 4.4 \text{ to } x = 5.0 \text{ units}) \\ \text{etc.} \end{cases}$$

Jean Baptiste Fourier (1768-1830) was a remarkable figure of the Romantic era. Although he is remembered today for his contributions to mathematics, he also demonstrated considerable political acuity. During the Napoleonic time, he was influential in affairs of state, serving as governor of Lower Egypt. His most valued work while in Egypt centered around the organization of munitions workshops when the English fleet successfully cut off the French supply routes to the area. While these Chopinesque heroics have faded in significance, Fourier's work contained in "Theorie analytique de la chaleur" ("Analytical Theory of Heat"), published in 1822, contains great significance for the scientific community in the twentieth century. In this work, he expounded his belief that certain functions could be represented by trigonometric series. Trigonometric series may be represented by the general form:

where a_0, a_1, b_1, a_2, b_2 , etc. are constants, and x is a variable between $-\infty$ and $+\infty$.

After considerable effort had been expended in the investigation of these series, it became apparent that the field of study was too large to prove in a single general form. The question was changed to: "What conditions must be met to insure that the function $f(x)$ equals the summation of the trigonometric series?" Numerous researchers in this area have provided sufficient conditions to prove the convergence of trigonometric series in very specific areas. The first of these was Peter Gustav Dirichlet. This German mathematician is also memorable for several essays explaining the significance of Gauss' work.

There are three conditions:

1. The function $f(x)$ is defined and bounded in (a,b) , where the interval is equal to 2π , $(a,b = a + 2\pi)$. This means that there exists a finite positive number A such that at every point in (a,b) :

$$f(x) \leq A$$
2. $f(x)$ is integrable in (a,b) .
3. $f(x)$ has only a finite number of discontinuities of the first kind for every finite interval inside (a,b) .

The discontinuity in our problem involves the borders of the hole zone (the vertical lines are the borders of the hole zone). These are defined as:

This may be written as:

$$f(x_0 - 0) \neq f(x_0 + 0)$$

The Trigonometric Series

If Dirichlet's conditions are satisfied, the general trigonometric form presented earlier is defined by:

$$f(x) = \frac{1}{2}a_0 + a_1\cos x + a_2\cos 2x + \dots a_n\cos nx + \dots \\ + b_1\sin x + b_2\sin 2x + \dots b_n\sin nx + \dots$$

This may be reduced to the form:

$$(Eq. 1) \quad f(x) = \frac{1}{2}a_0 + \sum_{n=1}^{\infty} (a_n\cos nx + b_n\sin nx)$$

Computation of a_n and b_n :

The computation of the coefficients a_n and b_n is based on the following theorem of integration. There are two parts to the theorem:

If $f(x)$ is a function satisfying Dirichlet's conditions in the interval $(a, b = a + 2\pi)$, then:

Part 1: The definite integral:

$$\int_a^b f(x) \, dx$$

is equal to the sum of the finite integrals of the right-hand side:

$$\int_a^b f(x) \, dx = \sum_{N=0}^{\infty} \left[\int_a^b a_n \cos nx \, dx + \int_a^b b_n \sin nx \, dx \right]$$

Part 2: If $g(x)$ is a finite and continuous function in (a, b) , then:

$$\int_a^b f(x)g(x) \, dx = \sum_{n=1}^{\infty} \left[\int_a^b a_n g(x) \cos nx \, dx + \int_a^b b_n g(x) \sin nx \, dx \right] + \int_a^b \frac{1}{2}a_0 g(x) \, dx$$

By letting:

successively:

$$g(x) = \cos nx$$

$$g(x) = \sin nx$$

with $b = a + 2\pi$, we can solve for a_0 , a_n and b_n :

$$a_0 = \frac{1}{\pi} \int_a^{b=a+2\pi} f(x) \, dx$$

$$a_n = \frac{1}{\pi} \int_a^{b=a+2\pi} f(x) \cos nx \, dx$$

$$b_n = \frac{1}{\pi} \int_a^{b=a+2\pi} f(x) \sin nx \, dx$$

Calculation of Discontinuous Segments

If $f(x)$ is continuous in parts and has discontinuities in the segment of calculation, a special rule applies. Let the points of discontinuity be μ , ϵ , etc. Then if $f(x)$ is continuous in the intervals (a, μ) , (μ, ϵ) etc, the calculation of the constants a_0 , a_n and b_n are:

$$(Eq. 2) \quad \pi a_0 = \int_a^{\mu} f_{\mu}(x) \, dx + \int_{\mu}^{\epsilon} f_{\epsilon}(x) \, dx + \dots \\ + \int_{\lambda}^b f_b(x) \, dx$$

$$(Eq. 3) \quad \pi a_n = \int_a^{\mu} f_{\mu}(x) \cos nx \, dx + \int_{\mu}^{\epsilon} f_{\epsilon}(x) \cos nx \, dx + \dots \\ + \int_{\lambda}^b f_b(x) \cos nx \, dx$$

$$(Eq. 4) \quad \pi b_n = \int_a^{\mu} f_{\mu}(x) \sin nx \, dx + \int_{\mu}^{\epsilon} f_{\epsilon}(x) \sin nx \, dx + \dots \\ + \int_{\lambda}^b f_b(x) \sin nx \, dx$$

Calculation of the Proposed Function

Recall that the proposed function is described as:

$$f(x) \begin{cases} = 0 & (x = 0 \text{ to } x \leq 4.4) \\ = 1 & (x = 4.4 \text{ to } x = 5.0) \\ \text{etc.} \end{cases}$$

The proposed function is illustrated in *Figure 4*.

Using Equations 2-4, the constants a_0 , a_n and b_n are:

$$\pi a_0 = \int_{-k\pi}^{+k\pi} f(x) \, dx + \int_{+k\pi}^{2\pi - k\pi} f(x) \, dx \\ = x \Big|_{-k\pi}^{+k\pi} \\ \pi a_0 = 2k\pi$$

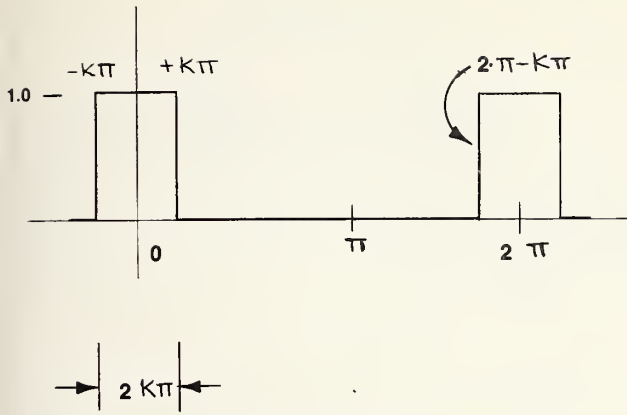


Figure 4. The proposed function.

Note that $f(x)$ is equal to zero in the interval $(k\pi, 2\pi - k\pi)$.

$$\begin{aligned}\pi a_n &= \int_{-k\pi}^{+k\pi} f(x) \cos nx \, dx + \int_{+k\pi}^{2\pi - k\pi} f(x) \cos nx \, dx \\ &= \left[\frac{1}{n} \sin nx \right]_{-k\pi}^{+k\pi} \\ \pi a_n &= \frac{2}{n} \sin nk\pi \\ \pi b_n &= \int_{-k\pi}^{+k\pi} f(x) \sin nx \, dx + \int_{+k\pi}^{2\pi - k\pi} f(x) \sin nx \, dx \\ &= - \left[\frac{1}{n} \cos nx \right]_{-k\pi}^{+k\pi} \\ \pi b_n &= 0\end{aligned}$$

Solution of k

Substitution for the length of the repeating unit of the collagen macromolecule and the hole zone is made in the interval of length 2π .

$$\begin{aligned}2\pi &= 5 \text{ units} = 0.6 \text{ units} + 4.4 \text{ units} \\ k\pi &= 0.3 \text{ units} \\ \pi &= \frac{5}{2} \text{ units} \\ k &= \frac{0.6}{5}\end{aligned}$$

Note that k is dimensionless.

Substituting in the general form (Equation 1) we arrive at the equation which is the model for the ultrastructural surface of bone:

(Eq. 5)

$$f(x) = \frac{0.6}{5} + \frac{2}{\pi} \sum_{n=1}^{\infty} \frac{1}{n} \sin\left(\frac{0.6}{5} n\pi\right) \cos(nx)$$

Comments

The growth of electronics in the twentieth century — especially in the fields of radio and television —

has given impetus to the establishment of firm theoretical techniques of mathematical interpretation of certain physical phenomena. Paramount among these phenomena are the varying and repetitive wave-form patterns observed in the transmission of electric signals. Analysis of these (for example, voltage-time and voltage-current displays on an oscilloscope) is handled with rigid mathematical theory using the trigonometric series, so long as certain conditions are met. We have borrowed some of these techniques and applied them to another physical occurrence (the repeating patterns of collagen and hydroxyapatite as observed under the electron microscope). The initial culmination of this work is represented in Equation 5, which is a model for the ultrastructural morphology of bone.

The purpose of this paper is two-fold. The first is the establishment of a model to map the surface of bone ultrastructure. As was noted, this was accomplished in the derivation of Equation 5. The second purpose is more abstract. This is the establishment of a theory of application. As any paper of this type must be, the subject matter presented is very eclectic. Our decision to make the collagen molecules equal to zero and the hole zones equal to unity are strictly arbitrary. The derivation of Equation 5 may be viewed as an example of how to apply the mathematical technique. By utilizing the theory described in this paper, any number of equations may be derived. Equations different from Equation 5 but of similar theoretical extraction are necessary when examining the morphological characteristics of bone when comparing physical events such as stress, strain, pressure, and fracture qualities. Also requiring different equations of structure are such metabolic diseases of bone as osteoporosis, osteomalacia and osteopetrosis, to name but a few. These should be within the reach of mathematical solution using the theory presented here.

Finally, the transference of these models to computer analysis is a logical step, because the mathematics are so similar. Hopefully, this will allow the relative ease of calculation of certain complex problems which are anticipated as our knowledge in this area grows.

References

1. Glimcher, M. J. and Hodge, A. J.: *Clin. Orthop.* 61:16, 1968.
2. Glimcher, M. J. and Krane, S. M.: The organization and structure of bone, and the mechanism of calcification. *A Treatise on Collagen*, Vol. II (Gould, B. S. and Ramachandran, G. N., eds.). London and New York, Academic Press, 1968.
3. Hodge, A. J. and Petruskov, J. A.: *Aspects of Protein Structure* (Ramachandran, G. N. ed.). New York, Academic Press, 1968.

Bladder Cancer

The Role of Radiation Therapy

CARL M. MANSFIELD, M.D.; EASHNER K. REDDY, M.D. and
GERALD V. HARTMAN, M.D., *Kansas City, Kansas*

THE FIRST written report on the diagnosis and treatment of bladder cancer is credited to Schuchardo in 1718. The introduction of the cystoscope by Nitze in 1879 was a great advance in diagnosis and treatment of this disease.

As in many cancers, the results of therapy in the treatment of bladder cancer are strongly influenced by the stage and histology of the tumor when the patient is first diagnosed. The American Cancer So-

It is difficult to obtain good survival results in the treatment of carcinoma of the bladder. Results by surgery or radiation therapy alone have been unimpressive. Recent interest in a combined approach using radiation therapy and surgery suggest that it may be possible to improve these survival results. This paper is intended as a comprehensive review of various therapeutic modalities in use today in the treatment of carcinoma of the bladder.

From the Department of Radiation Therapy, UKSM-KC.
Address reprint requests to Dr. Mansfield, UKSM-KC, 39th
& Rainbow Blvd., Kansas City, KS 66103.

TABLE I
CURATIVE

<i>Treatment Modality</i>	<i>Stage</i>
Surgery	
TUR	O A B —
Partial Cystectomy	O A B —
Total Cystectomy	— — B C
Radiation Therapy	
Interstitial	— A — —
Intracavitary	
Single source	O A — —
Radioactive	O — — —
Colloidal material	
External Therapy	
Pre-operative	— A B C
Post-operative	— A B C
The Primary Method	— A B C
Chemotherapy	
Intracavity Thiopeta	O — — —
Intracavity Adriamycin	O — — —
Intracavity 5 FU	O — — —
Intracavity Formilin	O — — —
Other	
Helmstein's Distension	— — — —
Hyperthermia	Palliative for A+B
Radiation sensitizers	
Pi mesons, neutrons, neon	
Protocols	

ciety data show that for local disease, the overall five-year survival rate is 80 per cent; 11 per cent for regional, and 7 per cent for metastatic disease.¹ If the patients with local disease are further subdivided on the basis of local extent, it becomes evident that local extent also influences survival.

The tumor grade, size, and depth of penetration into the bladder wall all influence survival.^{2, 3} Thus, regardless of the modality of treatment, patients with early stages do better than those with late stages of the disease. If one considers a situation of equal grade, the decrease in survival associated with more advanced disease may be due in part to the bladder's anatomy, in that the lymphatics are located predominantly in the muscular layers; therefore, the deeper the invasion of tumor, the greater the chance it will spread via the lymphatics. When actual lymphatic invasion is found in the bladder wall, lymph node metastases will be found in 90 per cent of patients.⁴

Traditionally, the approach to treatment has been influenced to some extent by the stage of disease. Such factors as the patient's attitude toward a particular treatment, the patient's general health, and type of previous therapy have been of lesser importance. The most significant factors that determine treatment have been the previous experience and personal preference of the physician.

Therapy may be generally outlined as in *Table I*.

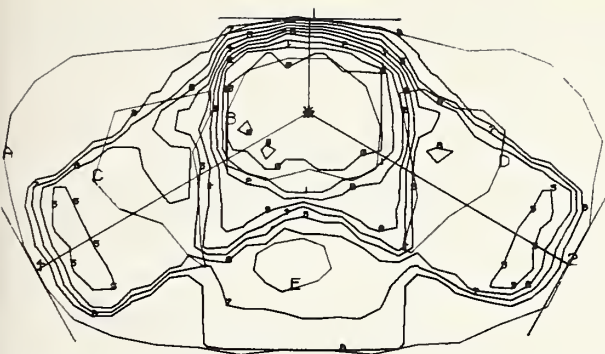


Figure 1. Dose distribution for the three field technique.

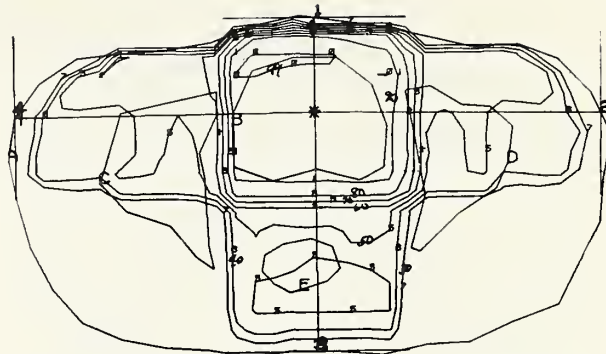


Figure 2. Dose distribution for four field technique.

Complications may be categorized as follows:

Surgical

1. Death 2-26%⁵
2. Pelvis adhesions
3. Edema of lower extremity
4. Problem with ileal loop

Radiation Therapy

1. Contracted bladder
2. Chronic cystitis
3. Bowel damage
4. Pelvic fibrosis

Pre-operative

1. Death 0-17%⁶
2. Wound infections
3. Bowel fistula

Surgery

Stages O and A are usually treated by transurethral resection and carefully followed by regular cystoscopic examination. An occasional B₁ can be managed in this fashion. Stages B and C are usually treated by total cystectomy. For B₁ lesions located in dome, a partial procedure is sometimes used; lymph node dissection is advocated by some.

Radiation Therapy

The use of interstitial implantation was one of the early methods of treating bladder cancer⁷ with radium or radon by direct visualization with the bladder open. Subsequently tantalum wires were used. These techniques did not improve survival over that of surgery or external radiation therapy. Interstitial therapy is also limited to the more superficial tumors. There has been some recent interest in the use of I-125.⁸

Intracavitary therapy in the form of single sources has been for the most part abandoned. This is due to the difficulty of maintaining the single source in a central position. In most instances the balloon containing the source inflates unequally with a resultant uneven dose distribution. Radioactive solutions in balloons that are distended in the bladder or radioactive colloidal solutions instilled directly into the bladder have been used in an attempt to produce a more even isodose distribution. However, all intracavitary therapy is of value only in the most superficial lesions (O, A).

Ortho-voltage x-ray equipment made it possible for the therapist to treat deeper into the pelvis. This resulted in less reliance on interstitial radium. However, the normal tissue received high dosage. The introduction of supra-voltage machines⁹ led to the development of techniques that delivered high doses to the bladder with improved sparing of normal tissue.

The curative treatment should be designed to encompass the bladder and the sites of direct spread, *i.e.*, the pelvic nodes. Therefore, the treatment volume should include the common and external iliac, hypogastric, and obturator nodes. This total pelvic volume should be treated to a minimum dose of 5000 rads in five to six wks @ 170-200 rads/day. The bladder should be given an additional booster dose of 1500-2000 rads so that it receives a total dose of 6500-7000 rads in 6.5-7.5 wks.

There are a variety of techniques used to accomplish this dose. The most common are:

1. The three-field technique consisting of an anterior and two posterior oblique fields, the purpose being to decrease the relative dose to the rectum (Figure 1).

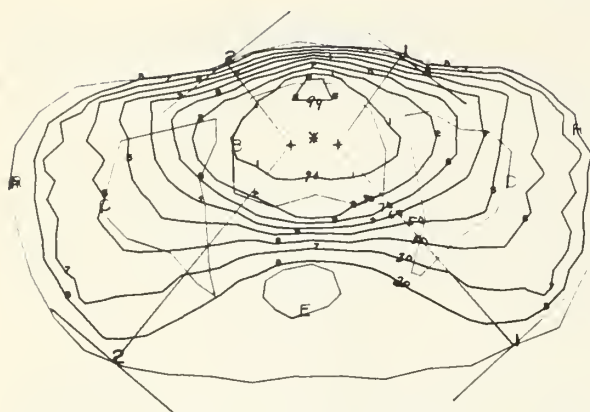


Figure 3. Dose distribution for two arc rotation.

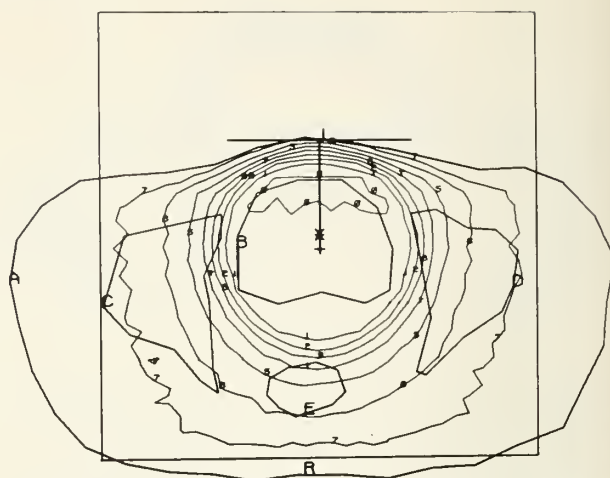


Figure 4. Dose distribution for 360-degree rotation.

2. The four-field or "box" technique consists of opposed AP and lateral fields (Figure 2).
3. ARC rotations. This may be a single arc with the posterior portion of the arc excluded. This reduces the dose to the rectum. When a double arc technique is used, the rectal dose can be kept low while better treating the pelvic walls (Figure 3).
4. 360-degree rotation can give a high bladder dose; however, the relative rectal dose is slightly higher (Figure 4).

Isodose values are listed in Table II.

The five-year survival rates for radiation alone range from 7-50 per cent.^{10, 11} Those with B₁ tumors or less have the best chance of survival.

There has been a renewed interest in preoperative irradiation. It has shown some initial encouraging results.¹¹ Several series have suggested that it may be possible to improve survival of patients with A, B, and C lesions.¹²⁻¹⁵ There have been various dose schemes; among them the use of 2000 rads for five days followed by immediate cystectomy. Another has been the use of 4000 rads followed by cystectomy in four weeks. Van der Werf Messing¹⁶ suggested a preoperative dose to the bladder of 4000-4500 rads. The bladder is then examined by cystoscopy. If there has been significant regression of the tumor, the patient is given a full course of

radiation therapy. If no change in the tumor is noted, the patient is subjected to cystectomy. The advantage of Van der Werf Messing's technique would be in saving the bladder in some patients.

Postoperative irradiation has been used mainly for the treatment of residual tumor. This situation will require 4500-5000 rads to the whole pelvis over a period of 4.5-5.5 weeks with a boost to any local disease. However, it must be recognized that the postoperative pelvis is less able to tolerate high doses of irradiation.

Chemotherapy

Thiotepa instilled in the bladder has been used,³ and recently adriamycin has been utilized.

Other Therapies

*Helmstein's Distension.*¹⁷ A latex balloon is introduced into the bladder and distended for six hrs at a pressure of at least 10 mm Hg above diastolic blood pressure. The only tumor that responded well was the long and loose-fronded T₁ papillary cancer. The purpose of this procedure is to cause necrosis of the tumor by decreasing its blood supply. It may not work for deeper infiltrating tumors because of the rigidity and resultant non-distensibility of the bladder wall in the involved area.

Hyperthermia has been used by Hall *et al.*¹⁸ They irrigated the bladder with isotonic solution at 45C.

Radiation sensitizers are being used in Canada and England. A clinical trial is being initiated in England to evaluate their use in bladder cancer.

Other forms of irradiation such as *neutrons*, *positive and negative pi mesons*,¹⁹ and *neon atoms* are being investigated.

(Continued on page 59)

TABLE II
ISODOSE VALUES

0 = 99%	4 = 60%
1 = 90%	5 = 50%
2 = 80%	6 = 40%
3 = 70%	7 = 30%

Waldenström's Macroglobulinemia

Pleuropulmonary Manifestations

E. DAVID KIRK, M.D., *Wichita*

A 47-YEAR-OLD WHITE female was admitted to the St. Joseph Medical Center, Wichita, on June 22, 1977, with the chief complaint of severe chest pain described as similar to a toothache. For two years, she had experienced progressive dyspnea and a non-productive cough. During the previous year, she lost 25 pounds. Her examination revealed blood pressure, 110/80 mm Hg; regular pulse rate, 120 beats/min; respiratory rate, 24/min. She was afebrile. Chest examination revealed diminished vocal fremitus and dull percussion of the right-lower lung field, anteriorly and posteriorly, and diminished respiratory sounds with crepitant rales of that area. The abdominal examination revealed an enlarged palpable spleen. The results of the remainder of the examination were normal.

The chest x-ray showed a parenchymal infiltrate at the right base and considerable effusion (*Figure 1*). Tests revealed white cell count (WBC), 7800/ml with the differential being 1 basophil, 2 eosinophils, 1 myelocyte, 1 metamelocyte, 13 stabs, 43 segmented neutrophils, and 39 lymphocytes; hemoglobin, 9.6 gm/100 ml; hematocrit, 30.6%; reticulocyte count, 1.6%; arterial blood gases, pH 7.49, pCO₂ 28 mm Hg, pO₂ 52 mm Hg, and oxygen saturation, 89%; bicarbonate, 21 meq/ml; total protein, 8.9 gm/100 ml; albumin, 3 gm/100 ml; BUN, 10 mgm/100 ml; creatinine, 0.9 mgm/100 ml. The immunoprotein electrophoresis revealed a monoclonal peak in the gamma zone with markedly elevated IgM. Quantitative determinations of the gamma globulin were IgG (240 mgm/100 ml), IgA (31 mgm/100 ml), and IgM (1984 mgm/100 ml). The serum viscosity was 3.43 (normal 1.4-1.8). Pleural fluid examination revealed 11,650 white blood cells/ml and 51,500 red blood cells/ml. The differential WBC of the pleural fluid was 38 polys and 62 lymphocytes; protein of the pleural fluid, 5.3 gm/100 ml. Needle aspiration of the bone marrow was normal. Lung and the pleural biopsy revealed dense lymphocytic infiltrates (*Figure 2*).

Primary macroglobulinemia is a chronic disease characterized by proliferation of reticuloendothelial cells and production of increased serum levels of gamma globulins. Clinical manifestations vary and may at times resemble those of lymphatic leukemia or lymphoma. Pulmonary involvement is rare; the case here presented is only the eighth known to have been reported.

The patient was started on chlorambucil and maintained on it for several months. She experienced complete remission, and on January 20, 1978, the gamma globulin determination was 1.29 gm, which was decreased 2.23 gm from the first gamma globulin determination in July 1977.

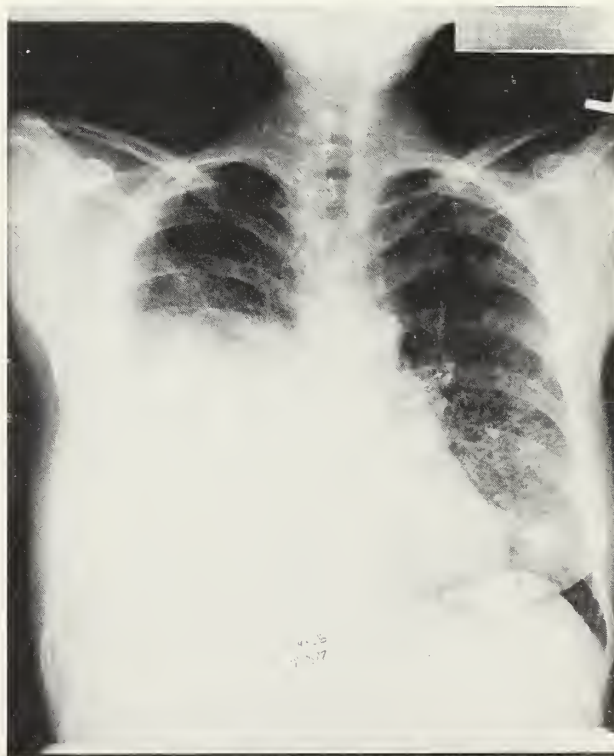


Figure 1. Chest x-ray shows parenchymal infiltrate at right base and considerable amount of effusion.

From the Department of Internal Medicine, UKSM-Wichita.
Address reprint requests to Dr. Kirk, 1431 S. Bluffview, Suite 209, Wichita, KS 67218.

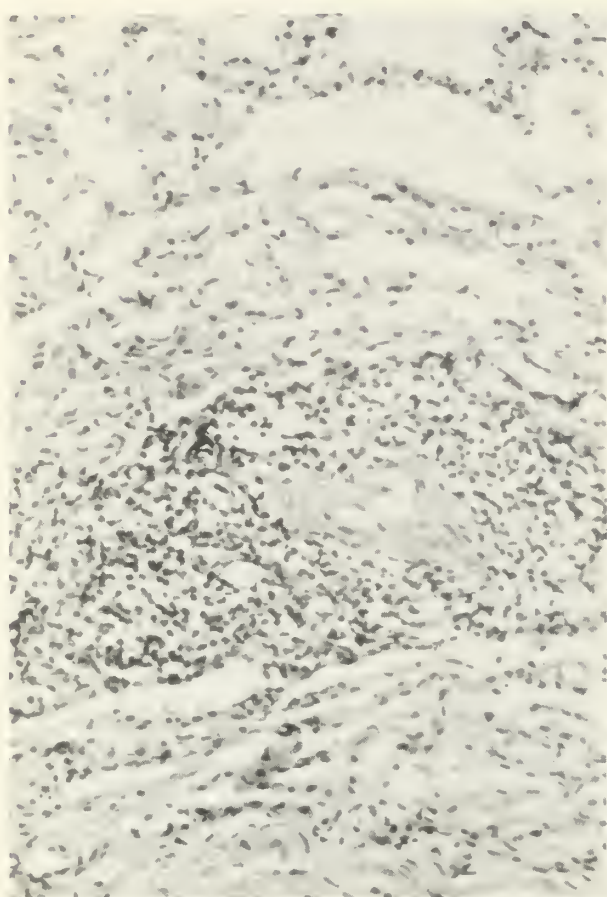


Figure 2. Lung and pleural biopsy shows dense mature lymphocytic infiltrates.

Primary macroglobulinemia was first described by Waldenström in 1944,¹ and appeared in American literature in 1956.² This is a chronic disease characterized by proliferation of the reticuloendothelial cells resembling lymphocytes and production of increased serum levels of gamma globulins of immunoglobulin M (IgM) class. The clinical manifestations are varied, but usually include malaise, weakness, weight loss, hepatomegaly, splenomegaly, and lymphadenopathy. There is usually anemia; serum viscosity is increased due to the high molecular weight and unusual shape of the macroglobulin. The disease can turn into a clinical pattern resembling lymphatic leukemia or lymphoma. The diagnosis is established by the clinical presentation, monoclonal spike of the macroglobulins, and histological pattern of lymphocytic-like cell infiltrations of organs which are distinct from lymphoma.

The first report of pulmonary involvement in Waldenström's macroglobulinemia was by Noach in 1956.³ Pleuropulmonary manifestations of Wal-

denström's macroglobulinemia are rare and have varied from 0-3 per cent in several series.⁴⁻⁶ The latest Medicine textbook does not even mention pleuropulmonary involvement.⁷

A search of the literature reveals only seven case reports of Waldenström's macroglobulinemia in which primary manifestation was pleuropulmonary.⁸⁻¹⁰ This case report brings the total to eight.

In the five cases of predominantly pleuropulmonary involvement reported by Winterbauer, *et al.*,¹⁰ the classic features of Waldenström's macroglobulinemia were frequently absent. In the case report of Rabiner, *et al.*,⁹ the sole presenting manifestation was pulmonary.

The prognosis of patients with primarily pleuropulmonary manifestations seems varied. In the case reported by Strunge,⁸ the patient had only a brief response to corticosteroid therapy. In the case report by Rabiner, *et al.*,⁹ the patient first exhibited an abnormality in the chest x-ray in 1960. The symptoms began in October 1967, and diagnosis was established in April 1968. She received steroids from September 1968 to June 1969, with modest improvement in symptoms. In April 1970, the symptoms worsened and chlorambucil (2 mgm/day) was started in May, 1970. As the pulmonary disease progressed, the doses were increased to 4 mgm/day. Over the next several months, she was maintained on 4-6 mgm/day with progressive clinical improvement. At the time of the report in November 1972, she was apparently still living.

Summaries of the five cases of Winterbauer, *et al.*¹⁰ are as follows:

Case 1. A 73-year-old male was diagnosed in 1970, treated with chlorambucil (6 mgm/day) and prednisone (20 mgm/day). The author stated that clinical response was gratifying. The longevity of the patient and the exact subsequent course are unknown.

Case 2. A 73-year-old female with abnormal chest x-ray 10 years prior to death, was diagnosed eight years prior to death, and was treated with prednisone (15-30 mgm/day) for three mos without improvement. Administration of chlorambucil produced excellent therapeutic response. She was asymptomatic for three yrs, but then suffered progressive respiratory failure despite chlorambucil (2-10 mgm/day), and died.

Case 3. A 70-year-old female exhibited an abnormal chest x-ray in August 1963. During the following seven years, she experienced progressive dyspnea. Diagnosis of Waldenström's macroglobulinemia was established in 1969, and she was

initially treated with prednisone (60 mgm/day) without improvement. She was then treated with chlorambucil and improved, but died two months later.

Case 4. A 56-year-old male exhibited bilateral lower lobe pneumonia in 1956, and a right-sided pneumonia in 1957. In 1958, diagnosis of Waldenström's macroglobulinemia was established. He was treated with chlorambucil (2-8 mgm/day), but died in 1969 with a squamous cell carcinoma of the lung.

Case 5. A 78-year-old female with a diagnosis established in February 1969, was followed for only two years. Because of her lack of cooperation, chlorambucil therapy was not undertaken.

Summary

The eighth case in the literature of Waldenström's macroglobulinemia with primary pleuropulmonary manifestations has been presented with a review of the literature. The diagnosis of Waldenström's macroglobulinemia with similar manifestations as in the case presented above is often overlooked because of its rarity. Waldenström's macroglobulinemia should be considered in any infiltrative lung disease, because chlorambucil can be of definite therapeutic benefit.

References

1. Waldenström, J.: Incipient myelomatosis or essential hyperglobulinemia with fibrinogenopenia. *Acta. Med. Scand.* 117:216, 1944.
2. Voight, A. E. and Frick, P. G.: Macroglobulinemia of Waldenström: A review of the literature and presentation of a case. *Ann. Intern. Med.* 44:419-425, 1956.
3. Noach, A. S.: Pulmonary involvement in Waldenström's macroglobulinemia. *Ned. Tijdschr. Geneesk.* 100:3881, 1956.
4. Cohen, R. J.; Bohannon, R. A. and Wallerstein, R. O.: Waldenström's macroglobulinemia: A study of ten cases. *Am. J. Med.* 41:274-284, 1966.
5. McCallister, B. D. et al.: Primary macroglobulinemia: Review with a report on 31 cases and notes on the value of continuous chlorambucil therapy. *Am. J. Med.* 43:394-434, 1967.
6. MacKenzie, M. R. and Fudenberg, H. H.: Macroglobulinemia: An analysis of 40 patients. *Blood* 29:874-889, 1972.
7. Harrison, T. F.: *Principles of Internal Medicine*, Volume 2:1785-1786. New York: McGraw-Hill Book Company, 1977.
8. Strunge, P.: Waldenström's macroglobulinemia, an unusual case having only pleuropulmonary manifestations. *Acta. Med. Scand.* 115:83, 1969.
9. Rabiner, S. F.; Aprill, S. N. and Radner, D. B.: Waldenström's macroglobulinemia. Report of a case with pulmonary involvement and improvement in pulmonary symptoms only following chlorambucil therapy. *Am. J. Med.* 53:685-689, 1972.
10. Winterbauer, R. H.; Riggins, Robert C. K. and Bauermeister, D. E.: Pleuropulmonary manifestations of Waldenström's macroglobulinemia. *Chest* 66:368-375, 1974.

Bladder Cancer

(Continued from page 56)

References

1. Silberberg, E.: Cancer statistics, 1977. *CA* 27:26, 1977.
2. Caldwell, W. L.: Carcinoma of the urinary bladder. *JAMA* 229:1643-1645, 1974.
3. Kilosseus, R. C.; Farley, E. and Blackard, C.: Bladder cancer in man. *Minn. Med.* 58:229-231, 1975.
4. Moss, W. T.: *Radiation Oncology*. St. Louis, The C. V. Mosby Co., 1973.
5. Wallace, D. M.: Total cystectomy. *Cancer* 32:1078-1083, 1973.
6. Powel-Smith, C. J. and Reid, E. C.: Preoperative irradiation and radical cystectomy in carcinoma of the bladder. *Cancer* 25:781-786, 1970.
7. Lenz, M.: The treatment of cancer of the bladder by radium needles. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 58:486-492, 1947.
8. Goffinet, D. R. et al.: Bladder cancer. *Radiology* 117:149-153, 1975.
9. Shanks, W.: Changing patterns in malignant disease and its treatment. *Br. J. Radiol.* 50:381-399, 1977.
10. Caldwell, W. L.; Bagshaw, M. and Kapland, H. S.: Efficiency of linear accelerator x-ray therapy in cancer of the bladder. *J. Urol.* 97:294-303, 1967.
11. Caldwell, W. L.: The role of irradiation in the management of clinical stage B₁ and stages B₂ and C bladder cancer. *Cancer Res.* 37:2759-2763, 1977.
12. Whitmore, W. F. et al.: A comparative study of two preoperative radiation regimens with cystectomy for bladder cancer. *Cancer* 40:1077-1086, 1977.
13. Prout, G. R.; Slack, N. H. and Bross, I. D.: *Preoperative Irradiation and Cystectomy for Bladder Carcinoma*, Seventh National Cancer Conference Proceedings. Philadelphia, J. B. Lippincott Co., pp. 783-791, 1973.
14. Galleher, E. P. et al.: Precystectomy irradiation for carcinoma of the bladder. *J. Urol.* 118:179-183, 1977.
15. Miller, L. S. and Johnson, D. E.: *Megavoltage Irradiation for Bladder Cancer*, Seventh National Cancer Conference Proceedings. Philadelphia, J. B. Lippincott Co., pp. 771-782, 1973.
16. Werf-Messing, B. Ven der: Proceedings: Carcinoma of the bladder treated by preoperative irradiation followed by cystectomy. *Cancer* 32:1084-1088, 1973.
17. England, H. R. et al.: Evaluation of Helmstein's distension method for carcinoma of the bladder. *Br. J. Urol.* 45:593-599.
18. Hall, R. R.; Schade, R. O. K. and Swinney, J.: Effects of hyperthermia on bladder cancer. *Br. Med. J.* 2:593-594, 1974.
19. Pistenma, D. A.; Li, C. G. and Bagshaw, M. A.: Basic considerations in simulated treatment planning for the Stanford Medical Pion generator. *Int. J. Radiat. Oncology* 2:345-356, 1977.

USE YOUR MEDICAL
LIBRARIES

YOUR LIBRARIAN WILL BE

HAPPY TO ASSIST YOU

Bacterial Endocarditis

Mitral Valve Prolapse Syndrome

CHIH-PING YANG, M.D., *Topeka*

BACTERIAL ENDOCARDITIS is a lethal disease if not diagnosed early and treated properly. The classic picture of bacterial endocarditis includes pyrexia, the presence of or changing cardiac murmur, splenomegaly, petechiae, clubbing of fingers, systemic emboli, anemia, and leukocytosis. When these symptoms are present, the diagnosis is obvious; however, bacterial endocarditis does not always follow a classic pattern. Indiscriminate use of antibiotics drastically alters the clinical and laboratory picture of the bacterial endocarditis. There has been increasing incidence of culture negative bacterial endocarditis as high as 20 per cent.¹ Diagnosis still relies on the clinician's high index of suspicion. Patients with valvular heart disease, regardless of cause — such as histories of rheumatic or congenital heart disease, idiopathic hypertrophic subaortic stenosis (IHSS), or calcification of the mitral annulus in the elderly — have been found more susceptible to infective endocarditis.²

With progress in understanding of mitral valve prolapse syndrome, bacterial endocarditis associated with this syndrome has been increasingly recognized.

Case Report

A 63-year-old male engineer had been treated for flu-like symptoms with aspirin and various antibiotics for a period of four weeks before coming to this hospital. The patient presented with no classic symptoms or signs of endocarditis. His body temperature was normal, and he exhibited no splenomegaly and no petechiae, but slight anemia and generalized weakness were manifest. Cardiac auscultatory findings revealed an apical holosystolic murmur with late systolic accentuation, and the murmur increased in intensity on standing, a finding consistent with mitral valve prolapse syndrome. Bacterial endocarditis was immediately suspected. Penicillin and streptomycin were given immediately after blood cultures were obtained. Five blood specimens grew *Streptococcus Viridans* and an

echocardiogram (*Figure 1*) confirmed the classic late systolic prolapse of the posterior mitral valve leaflet. Subsequent follow-up indicated that the subacute bacterial endocarditis had been cured with the combination of penicillin 20 million units/day for three weeks, and streptomycin 1 gm/day for two weeks. The minimal bacteriocidal concentration (MCB) and

The presence of mitral valve prolapse syndrome in a 56-year-old male with flu-like symptoms has alerted the physician to a diagnosis of bacterial endocarditis. It is emphasized that a thorough cardiac auscultation should be done and once the click or the murmur has been detected, bacterial endocarditis should be particularly sought for.

the bacteriocidal ability of the patient's serum against the subcultured bacteria were used to monitor the antibiotic effect during the course of treatment. A repeat echocardiogram remained unchanged at follow-up three months later. There were no complications or residual cardiac damage.

Discussion

In 1963, Barlow and co-workers³ postulated from angiographic evidence that systolic click and late systolic murmur were associated with prolapse of the posterior mitral leaflet. Since that time, the systolic click and late systolic murmur syndromes have generated a great deal of interest. Mitral valve prolapse syndrome associated with a spectrum of ventricular and supraventricular tachyarrhythmias and bradyarrhythmias are best detected by ambulatory electrocardiogram monitoring.⁴ Bradycardia in mitral valve prolapse was suggested as a potential mechanism of sudden death.⁵ The auscultatory findings in mitral valve prolapse could present as silent (no click or murmur), isolated midsystolic click, midsystolic click and late systolic murmur, or pansystolic murmur with or without late systolic accentuation. With reduced left ventricular volume as in standing, valsalva, tachycardia, administration of amyl nitrate, the click moves closer to the first heart sound and systolic murmur becomes more pro-

Address reprint requests to Dr. Yang, Department of Medicine, Veterans Administration Hospital, 2200 Gage Blvd., Topeka, KS 66622.

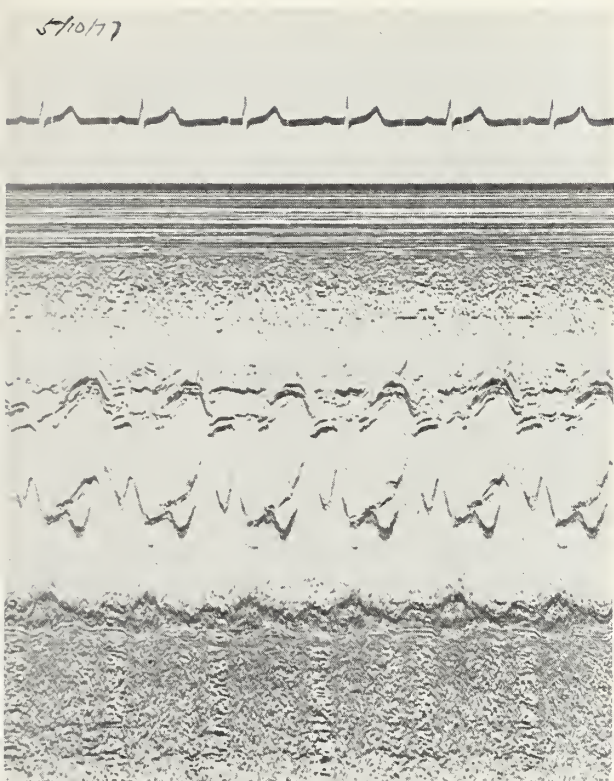


Figure 1. Bacterial endocarditis with mitral valve prolapse syndrome.

nounced. With increased left ventricular volume as in squatting, bradycardia, administration of propranolol or pressor agents, the click moves closer to the second heart sound and the systolic murmur decreases.^{6, 7}

Clinically the patient may experience palpitation or atypical chest pain which is poorly related to physical exertion and which is not relieved by nitroglycerin. However, the majority of the patients are asymptomatic. Markiewicz *et al.*, in screening 100 presumably healthy young females, found 17 per cent with cardiac auscultatory findings consistent with mitral valve prolapse syndrome.⁸ Although there was a flurry of publications on mitral valve prolapse syndrome, the associated bacterial endocarditis was not noted until 1967, when Lebauer, Perloff, and Keliher published their findings on the first case of bacterial endocarditis in a patient with an isolated systolic click.⁹ Shell and associates in 1969 reported on a patient with a late systolic murmur in whom pansystolic murmur and congestive heart failure developed during the course of infection.¹⁰ In

1975, Lachman, Barlow, and co-workers reported 10 cases of infective endocarditis in patients with mitral valve prolapse syndrome.¹¹ In 1977, Corrigan *et al.* reported 25 patients with mitral valve prolapse syndrome and infective endocarditis.¹²

Infective endocarditis in mitral valve prolapse syndrome probably is not rare; however, only about 50 cases have been reported in the literature. Bacterial endocarditis is a lethal but curable disease, and early diagnosis is thus very important. When classic signs are present, the diagnosis is obvious. However, the clinical signs and symptoms are often altered by prior medication, and the presence of bacterial endocarditis may not occur to the physician. The presence of mitral valve prolapse syndrome in cardiac auscultation could serve as an index of suspicion to alert the physician to the possible diagnosis. Prophylactic antibiotics prior to dental work or invasive procedures are indicated in mitral valve prolapse syndrome, the same as in rheumatic or congenital heart disease, idiopathic hypertrophic subaortic stenosis, or calcification of mitral annulus in the elderly.²

References

1. *The Principles and Practice of Medicine*, 19th ed., (Harvey, A. M. *et al.*, Eds.). New York, Appleton-Century-Crofts, p. 1250, 1976.
2. Cardiovascular Disease in MKSAP IV Syllabus 1977, pp. 39-40, American College of Physicians.
3. Barlow, J. B., *et al.*: The significance of late systolic murmurs. *Am. Heart J.* 66:443-452, 1963.
4. DeMaria, A. N., *et al.*: Arrhythmias in the mitral valve prolapse syndrome: Prevalence, nature, and frequency. *Ann. Intern. Med.* 84:656-660, 1976.
5. Leichtman, D., *et al.*: Bradycardia with mitral valve prolapse: A potential mechanism of sudden death. *Ann. Intern. Med.* 85:453-457, 1976.
6. Devereux, R. B., *et al.*: Mitral valve prolapse. *Circulation* 54:3-14, 1976.
7. Jeresatory, R. M.: Mitral valve prolapse — Click syndrome. *Prog. Cardiovasc. Dis.* 15:623-652, 1973.
8. Markiewicz, W., *et al.*: Mitral valve prolapse in one hundred presumably healthy young females. *Circulation* 53:464-473, 1976.
9. Lebauer, E. J.; Perloff, J. K. and Keliher, T. F.: The isolated systolic click with bacterial endocarditis. *Am. Heart J.* 73:534-537, 1967.
10. Shell, W. E., *et al.*: The familial occurrence of the syndrome of mid-late systolic click and late systolic murmur. *Circulation* 39:327-337, 1969.
11. Lachman, A. S., *et al.*: Infective endocarditis in the billowing mitral leaflet syndrome. *Br. Heart J.* 37:326-330, 1975.
12. Corrigan, D., *et al.*: Mitral valve prolapse and infective endocarditis. *Am. J. Med.* 63:215-222, 1977.



Current COMMENT

Breast Cancer Management

RONALD L. STEPHENS, M.D., *Kansas City, Kansas*

Primary Disease

MASTECTOMY REMAINS the primary treatment of patients with breast cancer; however, during the past decade the standard surgical procedure of radical mastectomy has been increasingly challenged. Numerous prospective studies in the United States and elsewhere have been launched to compare radical mastectomy to simple mastectomy, or to some combination of surgical removal of the primary tumor plus irradiation. It is appropriate that these studies vary in design and questions asked according to the stage of disease at presentation.

The axillary lymph node status continues to be the single most important prognosticator in this disease. Any analysis that seeks to determine how much surgery, or combination of surgery and irradiation, is necessary in the primary management of breast cancer must acknowledge the predictable influence of regional spread to the lymph nodes (Stage II). Not only does this bear directly on local and regional recurrence, but it portends the probability of sub-clinical distal disease, an issue that clearly will influence the interpretation of survival attributed to any primary treatment.

Although preliminary interpretation of these trials has failed to demonstrate any survival advantage for the more radical surgical approach, it must be emphasized that these periodic analyses are based on extremely early evaluations in a disease notorious for its long natural history. Consequently, we may be several years away from conclusive data that will

determine how much surgery, or surgery in combination with irradiation, is necessary to provide the optimal survival based on local or regional control of breast cancer.

In addition to axillary lymph node status, one other issue of anatomic importance must be recognized and considered in the final interpretation of survival benefit based on a single primary approach to breast cancer. As location of the primary cancer has a clear-cut influence on regional spread, data based on the more common outer quadrant cannot immediately be translated to tumors that arise in inner quadrants. Location of a cancer in this area requires a separate analysis since internal mammary node spread may be the sole index of regional disease.

One new frontier in the primary management of breast cancer is increased utilization of irradiation. Early indications of radiotherapeutic success in the management of primary breast cancer arose from small series of patients who were considered medically unfit surgical candidates, or from patients who rejected mastectomy. Survival statistics for these patients were similar to those treated primarily by surgery. Given the knowledge of the primary location plus the likelihood of recognizing the direction of microscopic lymph node spread, the radiotherapist has the potential to sterilize local and regional disease.

Before one can recommend irradiation as a primary treatment modality, it is important to reemphasize the need for more time to assess current prospective trials. More importantly, successful control of the primary breast lesion itself may involve more than external beam irradiation. In certain instances, breast implants that contain a radiation source may be required.

From the Department of Medicine, Division of Clinical Oncology, UKSM-Kansas City.

Address reprint requests to Dr. Stephens, Department of Medicine, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

Thus surgery will continue to play an important role, not only in the resection of the primary lesion ("lumpectomy"), but in staging the patient's disease through pathologic study of the axillary lymph nodes. For now, and probably for the foreseeable future, histologic pathology of the axillary lymph nodes will continue to dictate the need for adjuvant systemic treatment in the form of chemotherapy.

Regional Disease

Once the regional lymph nodes are found to contain breast cancer, assuming an otherwise favorable primary, the question of what additional treatment, if any, becomes the most significant problem facing the patient with breast cancer. Prior to the more widespread use of adjuvant chemotherapy, most patients with positive axillary lymph nodes routinely received a course of postoperative irradiation. In many radiation therapy centers this approach is still used, the obvious goal being local and regional control. Most radiation oncologists utilize this approach because it significantly reduces local recurrence, although many randomized trials fail to suggest survival benefit. This lack of survival benefit from routine postoperative irradiation serves to remind us that the presence of positive axillary lymph nodes indicates the likelihood of distal or systemic disease.

While local control can be achieved by routine postoperative irradiation, it is becoming increasingly evident that closely followed patients may still achieve local control when, and if, chest wall recurrences require irradiation. Rather than routine postoperative irradiation, Stage II patients with no obvious distal disease may be candidates for adjuvant chemotherapy.

These general statements about pathologic Stage II breast cancer presupposes a favorable small primary, not fixed to skin or underlying pectoral muscles. In cases with unfavorable primaries, the relative roles of surgery and irradiation become more complex, and require that even closer attention be given to the extent of prior surgery. Halsted's original goal for his radical en bloc resection of breast, pectoralis muscles, and axillary contents was improved local and regional control. In the absence of radiation therapy as an adjunct to control local disease, there is little doubt that a meticulously performed radical mastectomy is superior to less radical surgery. Once again it is important to note the distinction between optimizing local control and improving survival from occult systemic disease.

Despite classic surgical descriptions of different approaches to breast cancer management, the variable introduced by the individual surgeon must be

considered. If one's comments about the control of unfavorable primaries with pathologic Stage II disease are limited to maximizing local control, it would seem that, in the absence of adequate data, any patient who undergoes less than a meticulously performed radical mastectomy should receive additional local management in the form of radiation therapy.

Obvious Systemic Disease

Approximately 10 per cent of patients have evidence of systemic breast cancer at the time of initial presentation. These patients require systemic therapy in the form of chemotherapy or hormonal treatment. To optimize long-term palliation, surgery or irradiation may still be required to prevent unacceptable local and regional disease. This local treatment may take the form of a "toilet" mastectomy, to prevent a future large ulcerating chest wall tumor, or irradiation to an impending pathological fracture. Additionally, irradiation may be used to relieve a solitary focus of disabling bone pain, or in the management of central nervous system metastases where drug therapy is likely to be ineffective.

Once local problems have been maximally managed, appropriate systemic therapy must be considered. Until recently the estrogen receptor status was unknown, and one empirically decided between hormonal treatment and chemotherapy on the basis of the distribution of metastatic disease. For women with massive liver metastases or pulmonary lymphangitic disease the probability of response to hormonal manipulation was low, and the disease distribution rarely allowed the necessary two or three months to ascertain a response. Recently, data have suggested that the more rapidly growing tumors, which often involve vital visceral organs, are less sensitive to hormonal treatment, and are even potentially more sensitive to cytotoxic chemotherapy. Conversely, in the pre-estrogen receptor era, it was apparent that metastatic disease in lymph nodes, bone, skin, pleura, and discrete pulmonary nodules occurred in patients who could reasonably be expected to respond to hormonal therapies. These therapies might take the form of oophorectomy in premenopausal women, or additive hormonal treatment in postmenopausal women. A patient's response to initial hormonal treatment was used as an excellent guide to possible future endocrine ablative treatment such as adrenalectomy or hypophysectomy.

Many of these empirically developed treatment guidelines have been modified as new techniques have evolved allowing a patient's cancer estrogen

(and potentially progestational) receptor status to be determined. Any woman undergoing a primary resection for breast cancer, or who has accessible metastatic lesions, should have the estrogen (and potentially progestational) status determined on her cancer. Knowledge of the individual's hormonal dependency of her cancer will influence future treatment choice should she ultimately relapse. In advanced disease, presence of positive estrogen receptors could reasonably allow consideration of hormonal management as these patients have approximately a 65 per cent chance of responding. The absence of estrogen receptors predicts a less favorable response to hormonal therapies (only 5% or less). Hence, patients with advanced disease and negative receptor status should be considered immediate candidates for chemotherapy.

Once the need for chemotherapy has been determined, drug selection can proceed in a rational fashion. Isolated studies suggest that adriamycin in combination with other active agents may be the preferred initial cytotoxic therapy. Unfortunately these studies are often the result of a single investigator's enthusiasm for his particular drug combination rather than larger cooperative group efforts to investigate optimal drug combinations. Sequential therapy with individual active agents appears inferior to combination drug treatment, and the last decade of major clinical trials suggests that the preferred initial therapy includes a five-drug combination of cyclophosphamide, methotrexate, 5-fluorouracil, vincristine, and prednisone. In these larger cooperative group efforts, the initial combination of adriamycin with other active agents has failed to demonstrate a superior response rate to the five-drug combination. Additionally, the five-drug combination has the advantage of avoiding the cumulative cardiotoxicity of adriamycin, plus the advantage of reserving adriamycin for those patients who ultimately fail on initial drug treatment.

In this modern era of estrogen receptor determinations it is impossible to depart from any discussion of therapy for advanced breast cancer without mentioning the new systemic anti-estrogen, Tamoxifen. In both pre- and postmenopausal women with advanced disease and positive estrogen receptors, this compound deserves serious consideration. At this early point, the advantages of Tamoxifen over diethylstilbestrol (DES) in postmenopausal women appear to be a similar response rate, decreased gastrointestinal toxicity, decreased fluid retention, decreased urinary incontinence, and a lower incidence of hypercalcemia. While Tamoxifen can be used to replace DES in older women, there is currently in-

sufficient data to advocate it as a replacement for oophorectomy in premenopausal women.

Presumably, this agent can successfully compete with endogenous estradiol cytosol receptors in hormonally sensitive premenopausal women with breast cancer, as well as those postmenopausal women who would have previously been treated with high dose DES. In the past, the rationale given for using DES in postmenopausal women with breast cancer was alteration of the hormonal milieu in which the disease was relapsing. However, the more recently acceptable explanation is that DES in high pharmacologic doses (5 mg tid), like Tamoxifen, competes for estradiol receptors in the breast cancer cells. Endogenous estradiol is present even in the postmenopausal women.

Occult Systemic Disease

Any woman with histologically positive axillary lymph nodes has a 70 per cent chance of dying from breast cancer within 10 years of her mastectomy. The fact that local recurrence is influenced by the character of the patient's primary lesion has been emphasized above, and appropriate therapeutic considerations have been stressed. However, most of these women will die from distal disease, and this probability of ultimate failure has led to the current adjuvant chemotherapeutic trials. By definition, adjuvant chemotherapy programs attempt to modify this high probability of mortality from recurrent breast cancer (positive axillary lymph nodes), and increasingly, attempts are being made to utilize the drug (or drug combination) that is most effective in controlling the microscopically advanced forms of the disease.

Conceptually, it is important to consider whether the chemotherapeutic treatment of statistically probable micrometastases requires the same or less aggressive treatment than that of advanced measurable disease. One cannot assume that a potentially more immune suppressive combination of drugs, obviously more effective in advanced disease, will be equally beneficial for all patients with a high probability of relapse. Consequently, those studies that compare a single agent such as melphalan to a placebo, or a combination of drugs to a placebo, will provide important information with regard to how much cytotoxic therapy is really needed in adjuvant settings. These differences become more important when one examines the relative success in pre- and postmenopausal women.

Nowhere in the evaluation of breast cancer management is it more treacherous to evaluate results of current studies than in adjuvant chemotherapy trials.

The results of the relative benefits of chemotherapy in pre- and postmenopausal women vary from one evaluation session to another. Survival (versus recurrence) data are lacking in all clinical trials. It is in the recognition of this important data deficiency that we temper our interpretations and await more conclusive information.

Unfortunately for women who have regional lymph node metastases today, some rational decision must be made with reference to adjunctive therapy. Although one major United States and one Italian study have failed to demonstrate any decrease in relapse rate for postmenopausal women treated with chemotherapy (in contrast to premenopausal women), one study in this country and one in Switzerland suggest that there is a chemotherapeutic advantage, even in these same postmenopausal women. The last two studies have shorter follow-up and must be judged accordingly; however, three of the four studies do suggest statistically significant decreases in recurrence in premenopausal women either with chemotherapy against a placebo or when combination therapy is compared to a single agent. That these studies ask significantly different chemotherapeutic questions must also be recognized. Even at this early point, however, one can make some limited operative generalizations. At the pres-

ent time, this writer treats all women (pre- and postmenopausal) who have positive axillary nodes with one year of the previously mentioned five-drug combination.

Self-Assessment Questions

True or False

1. With the new advances in radiotherapy it is now safe to conclude that this modality is preferred over surgery in the treatment of primary breast cancer.
2. In patients with regionally advanced breast cancer (Stage II) the primary goal of post-operative irradiation is improvement in local control.
3. Tamoxifen and diethylstilbestrol probably exert their beneficial effect in postmenopausal patients with advanced breast cancer through a similar mechanism, specifically by competing with estradiol receptors in tumor cells.
4. Estrogen receptor determination should be done on all breast cancer mastectomy specimens.
5. Although the issue is still unsettled currently it appears that *at least* premenopausal women with Stage II breast cancer are candidates for chemotherapy.

(Answers on page 67)

HEALTH INFORMATION ACCESS

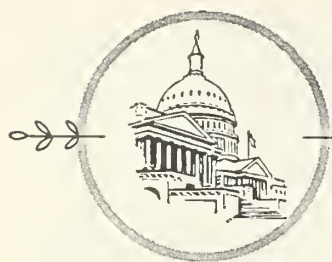
Extended biomedical library services are available to all Kansas Health Personnel who have limited or no library facilities.

For:

- . . . Prompt medical reference services
- . . . Preparation of bibliographies/computerized literature searches
- . . . Photocopying and mailing of book and journal articles

Dial toll-free: 1-800-332-4193 UKSM Kansas City, KS

There are trained Medical Librarians on duty Monday through Friday from 8 AM to 5 PM to answer your information needs.



Socio- ECONOMICS

Tips on Submitting Health Insurance Claims

Ed Note: This is the 11th in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December, 1978 and January, 1979.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

COMPLETION OF claim forms is a significant part of the everyday practice of medicine. When a claim form is properly completed, it usually means that the physician or the patient will receive payment quickly. Claims that are not paid or that are paid slowly are not always the fault of the insurance carriers — surprising as that may seem!

Here are four tips to assist the physician and staff in their relationship with the health insurance industry.

Make Them Readable

Frequently, claims are submitted with illegible information. The physician and the medical assistant may be familiar with each other's handwriting, but a claims examiner who reviews many different physicians' handwriting may have difficulty deciphering the message. If that is the case, several things can happen. The examiner may contact the physician's office by phone or mail asking for an explanation or clarification, which causes an unnecessary interruption. Or, the claims examiner may make an assumption about what was reported, which may result in under- or over-payment, which creates a bookkeeping problem. The solution? Submit a legible claim the first time, preferably typewritten.

Symptoms and Diagnosis Listed

A complete diagnosis and a description of the relevant symptoms must be listed on the claim. In-

surance carriers base their payments on medical necessity, and there tends to be correlation between the services reported and diagnoses. In some cases the final diagnosis may not be related to the service or services performed, however. By reporting the symptoms, as well as the patient's initial complaint along with the final diagnosis, the claims examiner can equate the two with the service. When everything fits together, the claimant gets paid.

Talk the Same Language

This means the physician's office and the carrier must use the same terminology. There are several medical terminologies in use: AMA's CPT, Blue Shield, and California RVS to name a few. The use of the terminology most often used in your area will expedite the processing of the claim.

Is Your Report Complete?

Each service performed and the individual charge for each should be reported separately. For example, if a patient received 10 days of in-hospital medical care, the physician services should reflect, for instance, that one was an extended visit; four were intermediate visits, and five visits were brief visits. Proper reporting using AMA's CPT would be:

10/1/77	90270	One (1) extended visit @ \$_____ — total \$_____
10/2/77 thru 10/5/77	90260	Four (4) intermediate visits @ \$_____ — total \$_____
10/6/77 thru 10/10/77	90240	Five (5) brief visits @ \$_____ — total \$_____

It is good to remember that good communication through properly completed claim forms assists all parties: the physician, the patients, and the carrier. And, of course, there is no substitute for knowledgeable staff people. If claims from your office are delayed because of "people problems" rather than "paper problems," a call to the carrier is indicated. Their training sessions are helpful. Their professional relations representatives make office visits as well, to assist physicians' staffs.

Legal and Tax Trends

Leasing Your Employees?

If you lease your employees from a medical service company will your pension plan still qualify under ERISA? YES. . . . but maybe not! A recent ruling of the Internal Revenue Service illustrates the danger in utilizing this type of arrangement.

X-Co., a medical professional corporation, officially employed only Dr. X. His nurses and office staff were employed and supplied by an employee leasing corporation, STAFF, Inc.

X-Co. established both a defined contribution pension plan and a profit sharing plan, to which the corporation made contributions on behalf of Dr. X. At no time were the personnel leased from STAFF, Inc., covered under the plan. The IRS contended that X-Co.'s plans should be retroactively disqualified for failure to comply with the IRC 401(a); the corporation argued that they had not so failed. The code section in question requires, basically, either coverage of a stated percentage of all employees eligible for coverage, or a showing that the plan does not discriminate in favor of officers, stockholders, or highly compensated employees. X-Co. contended that its plans came squarely within 401(a) with Dr. X being the only employee of the company, and with Dr. X being covered, there was 100 per cent coverage! Only by taking the STAFF employees into consideration for the ERISA coverage purposes could the IRS claim that the coverage test was not met — and the STAFF employees were just that, staff employees, and not employees of X-Co.

The IRS found the corporation's distinction to be specious, and the tax court agreed. It is well settled that the status of "employee" is determined under common law (the common law definition of "employee," as it has evolved over the years, pivots around the concept of control). If Dr. X has real and substantial control over the various aspects of B's work, then B is Dr. X's employee. In the above case, either X-Co. or Dr. X himself has the final say on virtually every detail of the leased employees' jobs, including interviewing, hiring, training, determination of rate of pay, determination of time, place, and nature of duties to be performed and, ultimately, firing. In the final analysis, STAFF's entire relationship with the employees in question came down to a

series of bookkeeping entries: the individuals were listed on the payroll of STAFF, Inc., and received their actual paychecks from STAFF, Inc. (after STAFF, Inc., had collected from X-Co. the amounts with which to pay such salaries). The court refused to honor form over substance by giving any credence to the contention that the individuals leased from STAFF, Inc., were anything other than the employees of X-Co.

Having so decided, the court further found the X-Co. pension and profit sharing plans to be disqualified for failure to cover the required percentage of company employees.

This ruling by the Internal Revenue Service and the courts does not necessarily exclude a professional corporation from utilizing a lease corporation's services, but points up the difficulties that may arise in having a qualified plan approved.

Breast Cancer Management

(Continued from page 65)

Answers

1. *False.*
2. *True.*
3. *True.*
4. *True.*
5. *True.*

Suggested Readings

1. Fisher, B.: Comparison of radical mastectomy with alternative treatments for primary breast cancer: A first report of results from a prospective randomized clinical trial. *Cancer* 39:2827-2839, 1977.
2. Levene, M. D.; Harris, J. R. and Hellman, S.: Treatment of carcinoma of the breast by radiation therapy. *Cancer* 39:2840-2845, 1977.
3. Carter, S. K.: The chemical treatment of breast cancer. *Semin. Oncol.* 1:131-144, 1974.
4. McGuire, W. L. *et al.*: Hormones in breast cancer; update 1978. *Metabolism* 27:487-501, 1978.

The President's Message

The Kansas Legislature is in session. A variety of bills have been and will be introduced by legislative study committees and individual legislators that are of interest to medicine and will affect our practice of medicine now or in the future. We know there will be bills on: prospective hospital rate review, credentialing of health care personnel, extension of certificate of need (CON) to physicians' offices, among others. Other bills affecting medicine were introduced in the early days of the session and the Kansas Medical Society will keep us informed via the Legislative Bulletin.

These days while the Legislature is in session are a busy, hectic, confusing time; yet an important time that should command the involvement and interest of every physician and spouse! It should arouse us because the only solution to problems that the government can provide is by way of the regulatory approach, the replacement of the market forces (private sector) with regulatory forces (utility). Knowles, in an article entitled, "Control of Health Care in Institute of Medicine," states that unnecessary costs in highly regulated industries induced by regulation itself account for 25 per cent of industry revenues. Unless we wish to practice in a utility-type environment, we must become involved in the legislative process.

Dr. Lawrence Scheer, Associate Dean of Cornell University Medical College, wrote, "In coping with government and government policies and regulations, we must constantly be aware that those who regulate can ONLY influence what is known and thereby CANNOT foster new knowledge. It is our responsibility as physicians, teachers, and members of the profession to always be aware of this shortcoming and to temper our responses and actions accordingly."

What can I do?

1. If you don't know your legislators, get to know them and be interested in their "profession." Bad government is the result of good people doing nothing.

2. Become familiar with the issues. The weekly KMS Legislative Bulletin containing a brief sum-



mary of all house and senate bills dealing with medical subjects and their current status is yours by asking the KMS office to send it to you.

3. Volunteer to be a "Keyman." If you know a legislator personally and would be willing to talk to him about medicine's point of view on these bills, let the KMS office know. The legislator will appreciate talking the issue over with someone he knows and respects, and it will make Jerry's and Jimmie Gleeson's job easier.

4. Join KaMPAC and help support a worthy state legislator financially.
And better still . . .

5. Work for the legislator of your choice when election time comes around. Let him know you think enough of him to be willing to work to get him elected. If he wins, he'll care about your opinion on medical matters.

There are no shortcuts to victory on the political scene. It takes a lot of hard work and dedication, things physicians are familiar with naturally. There is no shame in looking after your profession's best interests, because the protection of the physician's professional interests is in fact the patient's best protection. That is what the Kansas Medical Society stands for, "protecting the health of the citizens of this state."

Fraternally yours,

Warren E. Meyer, M.D.

President



“Let there be truth –”

This will serve as a sort of *caveat lector* to prospective readers who may wish to turn to a more rewarding pastime. The fact is that the ubiquitous problems of performing medical service in a socially tumultuous world still seem to us to show little sign of abatement and less of solution. Our dark mood is produced not only by the winter doldrums but the release of the recurrent political outcry against “unnecessary” surgery. The Subcommittee for Oversight and Investigations of the House Interstate and Foreign Commerce Committee (better known for purposes of brevity as well as tribute to the chairman as the Moss committee) has found again that a “monumental problem” exists not only in the lack of necessity but in the incompetent performance of a large amount of surgery. The committee’s judgment, covering 1977 and an updating of its original study in 1974, was predictable and extensive, chastising organized medicine for not having eliminated the problem, advising HEW to proceed with measures for mandatory second opinions (the current “voluntary” program being deemed ineffective), urging the Congress to legislate minimum standards of competence in surgery, and reporting that the majority of tonsillectomies in 1977 were not necessary. (The tonsils and uteri of the nation continue to be the prime objects of the committee’s agonized deliberations.) In short, the committee says the state licensing organizations, medical societies, and professional standard review organizations (which seems to be a fairly complete coverage of the profession) have failed to address the problem adequately, and the familiar sound is heard in the background: we’ll have to do it for you.

It is only proper to admit at this point that these thoughts are derived from the press stories, and we have not had the privilege of seeing the full report. On the other hand, we doubt if many people will storm the government printing office to get copies but most will rely on these same press stories for their

estimate of the state of surgical performance in the country. It should also be noted that the only definition of “unnecessary” reported in the story is the use of surgery “without appropriate medical treatment having been tried first.” According to the committee’s interpretation, 2 million surgical procedures, give or take a few, met this qualification as compared with 2.4 million reported in 1974. The committee is not heartened by this seeming improvement, however, for the cost was calculated to be more than \$4 billion as compared with something less than that amount in 1974, which goes to show that even if surgeons *are* improving, inflation isn’t. It attributes 10,000 deaths in 1977 to such procedures against 11,900 in 1974, but the profession is in the uncomfortable position of not being able to cite this seeming improvement without admitting the validity of the figures.

Which brings us again to the fact that any clear and effective rebuttal is hampered by a lack of knowledge of the methodology of the committee’s investigation. If it was ascertained that 2 million surgical procedures were unnecessary, one must presume the committee had to review *all* surgical procedures in order to find the ones that were unnecessary. We have no idea how many surgical procedures there were in total, so we have no idea what proportion the incriminated 2 million represents nor are we told how the information was obtained. Was each case analyzed, or was the total extrapolated from a “representative” study? How was it determined that — or what — medical treatment was inadequate prior to the employment of surgery? Was “necessity” always determined *a priori*, or was subsequent benefit to the patient taken into account? Does the dollar cost represent actual costs or some multiple of an average figure? But of greatest concern is the reported cost in lives with the obvious implication that these patients were sacrificed to the ineptitude — judgmental or technical — and greed of surgeons. Were there no

extrinsic or unrelated factors? Would these patients be alive today but for the procedures carried out?

The least unkind reference to physicians made by the committee was in an accessory report in which it faulted HEW's "inadequate controls" as accounting for a 70-per cent higher rate of surgical procedures in Medicaid patients than in the general public. This "did not accuse doctors of performing unnecessary operations because government payments were easy to come by," but recommended a "crackdown" by the Congress and HEW in the form of uniform definitions of surgical procedures as well as the reporting (read payment) methods.

We probably would have taken this report with more equanimity had it not appeared as we were reading Sissela Bok's book, "Lying,"* an extensive and intensive study of that universal mechanism of communication. While the book treats the subject generally and focuses on no single discipline, the author has, as an instructor in medical ethics at Harvard, a more than passing interest in the relationship of veracity and deception to the practice of medicine, and no one can deny that medicine produces a formidable variety of problems in this area.

This is not an oblique suggestion that the Moss committee report is a pack of lies. Naturally, we do not admit its total and literal validity, but the concern to us is that if the charges are true — or to the degree that they are true — they represent an indictment of the veracity of the physicians involved and, of course, by association, the profession. If patients are being subjected to unnecessary surgery, the surgeon is guilty of deception ranging from a misleading emphasis toward surgery in a problematic situation to gross misrepresentation of a non-surgical condition. Without claiming a complete state of grace for every physician (starting at home) we doubt, in our chauvinistic prejudice, that such deception occurred in all of the cases cited. Whether the problem lies in some inevitable incompetence (perfection being no more prevalent in the medical world than any other), or the method of assessment, or the quality of the records from which the figures were taken will probably never be settled to the satisfaction of all. But a disturbing feature of acceptance of the committee's figures lies in the implication that these would represent an immediately discernible group and detractors would assume an additional segment of the profession as functioning with only slightly less (but therefore undetected) venality. It is this interpreta-

tion, of course, as much as the presumably demonstrated cases that bolsters the call for external controls.

Now, Dr. Bok's book covers the full range of lying — from the gentlest of well-intended white lies to the blatant, deliberate, and destructive lies. We found it impossible to read without one eye on the philosophy involved and the other on the practical aspects of medical service, with the hopeless feeling for the fate of mankind which such philosophical treatises engender. While the focus is on lying in its various forms, it is as much so on truth since the two are reciprocal. One chapter in particular seemed applicable to this matter, a discussion of justification in which the author examines the devices the liar uses to justify his lie — or, if you prefer, the truthful person uses to justify his action when it is challenged as in error (that is, untruthful).

This balancing of the true and false, the good and bad, the positive and negative, is, in practical terms, the mechanism by which we reach any essential conclusion and certainly it is the most pervasive professional activity of the physician. Without citing unnecessary surgery as an exercise in deliberate deception, it can be pointed out that there is a great body of unequivocally justified medical service, surgical or otherwise. Physicians, imbued with this concept, are inclined to put a presumed clinical interpretation on every case with the unspoken belief that any moral consideration is contained within it. However, the less a case conforms to the necessary and objective documentation, the more there appears to be a dilution of the necessity for surgery and the problem becomes increasingly a moral issue. Although justification will ultimately have its clinical expression, the decision to proceed in the face of deficient clinical indications approaches a primarily moral decision.

It may be worth while to pass along a two-part test which the author proposes to determine the justification of the action. (True, she uses it to test the lie but again it is as applicable in testing truth.) Citing the condition of secrecy as a *sine qua non* of deception, she proposes that an acceptable action must withstand the light of publicity. However, the "public" to which this matter is exposed need be only as extensive as the case requires — not necessarily a broad media exposure and certainly not in a form violating the patient's confidence — but the general principle can be extended throughout the entire spectrum of professional function. She would have the matter introduced at the student level — "If such issues were publicly addressed, then those who plan

* "Lying" — Sissela Bok. Pantheon Books, a division of Random House, Inc. 1978.

to enter the professions where deceptive practices are common would have the opportunity in professional schools to consider how to respond before becoming enmeshed in situations which seem to require lying. They could confront hypothetical cases similar to many they will later encounter; articulate and weigh the reasons supporting the conflicting choices; and debate their strengths and weaknesses. A public test of this kind would remove the self-righteous belief in the unquestionable necessity for their lies on the part of those who operate with secret principles, fully trusting the blamelessness of their motives. And it would severely limit lies by professionals who believe that, as a group, they share a concern for the well-being of mankind which puts them beyond scrutiny."

But the other part of her test provides that the "public" be composed of "reasonable persons." While this concept, like the "publicity" cited, is simple to record, it would become complex in its application to individual cases. The two factors, however, are mutually supportive since the publicity (*i.e.*, information) will, if justified, enhance the "reasonableness" of this "public" while the increased reasonableness will qualify it to interpret the disclosures more suitably.

One may claim a wide gulf between these (oversimplified) points of philosophy and effective practical usage, but they exist and are operative even if ignored. In essence, they constitute the components of the truly informing function required in arriving at informed consent. It is time to look beyond this concept as simply a medico-legal protection to its function in demonstrating justification, whatever our problem. It might be a step toward putting the committee out of business.

Meantime, maybe we're progressing. This report was on an inside page — the 1974 report was on the front page. — D. E. G.

Vox Dox

Vox Dox Editor:

The November 1978 issue of *The Journal of the Kansas Medical Society* fascinated me because I am one of those "Wounded Healers." Several of my colleagues have bluntly told me that I am ill and have given me the advice: "Physician, heal thyself." I know I am ill but I have been unable to heal myself, so I am going to turn myself over to this committee.

Besides my age, my trouble is that I have too many delusions.

But first let me quote this short poem:

I dreamed death came the other night and heaven's gate
swung wide,
With kindly grace an angel ushered me inside,
And there to my astonishment stood folks I'd known on
earth,
Some I judged and labeled as unfit or little worth.
Indignant words rose to my lips but never were set
free . . .
For every face showed stunned surprise — no one ex-
pected me!

This short poem illustrates one of my worst and most ingrown impairments — that of delusions of grandeur. When this law on continuing education came into effect, I had the grandiose delusion — because of my long years of experience in rural practice — that I should be one of the teachers, not one of the pupils. But as the poem goes, "No one expected me" in such a grandiose role. On the other hand, as I looked over the various continuing education programs, "Some I judged and labeled as unfit or little worth." So, being unwilling to indulge in the sham of attending some of these courses, just to be able to retain my license to practice, on July 1, 1978, I became a totally impaired physician.

I have several other delusions which have been with me since the day I graduated 50 years ago involving the Hippocratic Oath, abuse of drugs, moral standards, and philosophies that do not fit into the scheme of modern methods of practice.

I also have many delusions of persecution by government bureaucracies. So you can bet on it that the Impaired Physician Program of the KMS is going to have a pretty tough time of it if they tackle my case — or am I just indulging in another delusion?

A. S. REECE, M.D.
237 W. Main
Gardner, KS 66030

Buy U.S. Savings Bonds



PAUL A. KAELSON, JR., M.D.

Dr. Paul A. Kaelson, Jr., 61, died December 24, 1978, in Wichita.

Dr. Kaelson was graduated from the University of Kansas School of Medicine in 1950 and had been in Family Practice in Wichita prior to recently joining the faculty staff of the Family Practice Center, St. Francis Hospital.

Survivors include one son and four daughters. Memorials have been established with the Family Practice Center, St. Francis Hospital, Wichita, and with the American Heart Association.

LEONARD F. PODREBARAC, M.D.

Dr. Leonard F. Podrebarac, 54, Wichita, died December 23, 1978, in Kansas City.

Dr. Podrebarac was born in Kansas City and was graduated from Creighton University School of Medicine in 1953. He had practiced in Wichita for 24 years.

Survivors include his wife and four sons.

CHARLES R. ROMBOLD, M.D.

Dr. Charles R. Rombold, 79, died December 18, 1978, in Wichita.

Dr. Rombold was born in Wichita and was graduated from Northwestern School of Medicine in 1924. He returned to Wichita where he practiced orthopedic surgery until his retirement in 1973. He was a co-founder of the Wichita Clinic and a past president of the Sedgwick County Medical Society.

Survivors include his wife, one son, and one daughter.

WARD W. SUMMERVILLE, M.D.

Dr. Ward W. Summerville, 81, died December 31, 1978, in Kansas City.

Dr. Summerville was born in Chillicothe, Missouri, and was graduated from the University of Kansas School of Medicine. He had been chief of pathology at Bethany Medical Center, associate professor of pathology and oncology at UKSM-KC, and was a past president of the Wyandotte County Medical Society. He was active in numerous professional associations.

Survivors include his wife, one son, and one daughter.

RAY A. WEST, M.D.

Dr. Ray A. West, 86, died December 9, 1978, in Wichita.

Dr. West was born in Anthony and was graduated from Rush Medical College in Chicago in 1919. He practiced in Wichita until his retirement in 1967. He was founder of the Wichita Obstetrical Society, co-founder of the Wichita Clinic, and a past president of the Sedgwick County Medical Society.

Survivors include his wife and one son. A memorial has been established with the Kansas Foundation for the Blind.

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays (913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission .. (913) 381-1331
Roy Neil, M.D., Hays (913) 628-3215
George M. Penn, M.D., Topeka (913) 234-9566
Ivan Rhodes, M.D., Wichita (316) 685-1291
Alex Scott, M.D., Junction City (913) 238-2518
M. C. Spencer, M.D., Topeka (913) 234-3451
Max Teare, M.D., Garden City (316) 276-7689
Kermit Wedel, M.D., Minneapolis (913) 392-2144

Kansas Medical Society, Topeka (913) 235-2383/235-3619

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

Robert Julian Belt, M.D.
UKSM-Kansas City
39th & Rainbow Blvd.
Kansas City, KS 66103

Baikunth N. Bhargava, M.D.
959 N. Emporia, #205
Wichita, KS 67214

Arthur August Desmet, M.D.
UKSM-Kansas City
39th & Rainbow Blvd.
Kansas City, KS 66103

Robert L. Druet, M.D.
550 N. Hillside
Wichita, KS 67214

Robert Ellsworth Fitch, M.D.
1455 Lakeside Drive
Topeka, KS 66604

Shantikumar K. Gandhi, M.D.
Box 829
Topeka, KS 66601

Norman G. Hamilton, M.D.
Box 829
Topeka, KS 66601

Paul Barry Harrison, M.D.
3243 E. Murdock, #201
Wichita, KS 67208

Rhonda Detert Jeffries, M.D.
436 State Ave.
Kansas City, KS 66101

Norbert W. Kearns, M.D.
5504 Fairlawn Rd.
Topeka, KS 66610

Mau Shong Lin, M.D.
Memorial Hospital
417 E. Sixth
Topeka, KS 66611

Gilbert R. Parks, M.D.
38 Medical Arts Bldg.
Topeka, KS 66604

Fred Edward Patrick, M.D.
109 Medical Arts Bldg.
Topeka, KS 66604

James Gordon Price, M.D.
UKSM-Kansas City
39th & Rainbow Blvd.
Kansas City, KS 66103

Mohammad Ashraf Sufi, M.D.
Memorial Hospital
417 E. Sixth
Topeka, KS 66611

Qaiser A. Sufi, M.D.
7210 Fountain Dale
Topeka, KS 66614

Olga Adelina Tatpati, M.D.
UKSM-Wichita
1001 Minneapolis
Wichita, KS 67214

Nanda Kumar Vemireddi, M.D.
V. A. Medical Center
Kansas City, MO 64015

THE UNIVERSITY OF KANSAS COLLEGE OF HEALTH SCIENCES AND HOSPITAL DIVISION OF CONTINUING EDUCATION

Symposia:

REHABILITATION MEDICINE: Sexuality of the Handicapped — A Sexual Attitude Reassessment Seminar

March 29 and 30, 1979

Guest Faculty:

SCOTT MANLEY, Ed.D., Craig Hospital, Englewood, Colorado.
JOAN TAGGIE, M.S., Craig Hospital, Englewood, Colorado.
WILLIAM SMITH, Craig Hospital, Englewood, Colorado.
PETER YOUNG, Kansas State Department of Social and Rehabilitation Services, Topeka.

This seminar is carefully organized in a developmental sequence. Large group presentations include movies and slides depicting, sometimes explicitly, sexual activities. In addition, members will meet together in smaller group discussions with trained group facilitators. This seminar expands sexual awareness, reassesses sexual attitudes, improves sexual communications.

Accreditation:

American Medical Association: 17 hours of Category I.
American Academy of Family Physicians: 17 prescribed hours.

Registration Fee: \$100.00.

OPHTHALMOLOGY: Ophthalmic Plastic and Reconstructive Surgery

April 2 and 3, 1979

Guest Faculty:

ROBERT M. DRYDEN, M.D., University of Arizona School of Medicine and St. Joseph's Hospital, Tucson.
BARTLEY R. FRUEH, M.D., University of Missouri Medical Center, Columbia.
ROBERT R. WALLER, M.D., Mayo Medical School, Rochester, Minnesota.
JOHN L. WOBIG, M.D., University of Oregon Health Sciences Center, Portland.

Subjects to be discussed will include: UPPER EYELID ANATOMY; LOWER EYELID ANATOMY; ENTROPION REPAIR (APONEUROSIS DEHISCENCE REPAIR); CLASSIFICATION OF PTOSIS; LEVATOR RESECTION — ANTERIOR AND POSTERIOR APPROACH; BLEPHAROPLASTY — PATIENT EVALUATION — UPPER AND LOWER EYELID TECHNIQUES; SIMPLE BLOCK RESECTION FOR TUMOR REMOVAL; MEDIAL CANTHAL RECONSTRUCTION; EVALUATION OF PATIENT WITH EYELID RETRACTION; LACRIMAL SECRETORY SYSTEM; ANATOMY AND PHYSIOLOGY; NASOLACRIMAL DUCT OBSTRUCTION IN CHILDREN.

Accreditation:

American Medical Association: 14 hours of Category I.
American Academy of Family Physicians: 14 prescribed hours.

Registration Fee: \$100.00.

For program announcements and information, write: DIVISION OF CONTINUING EDUCATION, The University of Kansas College of Health Sciences and Hospital, Kansas City, Kansas 66103

The Duty of Hospitals and Hospital Medical Staffs to Regulate the Quality of Patient Care

IN 1881 Oliver Wendell Holmes, Jr. wrote: "The life of the law has not been logic; it has been experience."¹ Holmes went on to become the "great dissenter."

His father was Dr. Oliver Wendell Holmes, Sr., once dean of the Harvard Medical School. In 1842, almost a generation before Semmelweis, Dr. Holmes published a paper, "The Contagiousness of Puerperal Fever," which held that the disease was related to the personal uncleanness of the attending obstetricians.² The medical profession rose up in arms against Dr. Holmes. He ignited a controversy that would rage for years. One of Dr. Holmes' opponents was Dr. Hugh Lenox Hodge, professor of obstetrics at the University of Pennsylvania and the Pennsylvania Hospital. That hospital's department of obstetrics "had a somewhat unfortunate experience with puerperal fever and after being closed for some time was finally abandoned in 1854."³

Dr. Holmes replied to his critics only rarely. But he did say once: "I am too much in earnest for either humility or vanity, but I do entreat those who hold the keys of life and death to listen to me for this once. . . . I beg to be heard in behalf of those . . . whose lives are at stake, until some stronger voice shall plead for them."⁴

The statements of both Dr. Holmes and Justice Holmes epitomize the theme of this discussion. Improvement in the quality of patient care cannot be accomplished by law alone. The law is too variable, too subject to historical accidents and to the transitory sentiments and prejudices that judges share with their fellow men, to provide any lasting assurance. Real assurance of improvement in the quality of care can be provided only by constant dedication to that goal by those "who hold the keys to life and death." Such dedication may require the sacrificing of some sacred cows, a prospect that not everyone can face with the equanimity of a Dr. Holmes.

The author, B. Abbott Goldberg, LLB, is a retired judge of The Superior Court, Sacramento, California.

This is a revised version of a paper delivered to the Symposium on Quality Assurance in Hospitals sponsored by the University of California, San Francisco, in cooperation with the California Hospital Association, October 7-8, 1976, San Francisco.

Reprint request to: B. Abbott Goldberg, Judge of The Superior Court, Retired, 3221 American River Drive, Sacramento, CA 95825.

Reprinted from *The Western Journal of Medicine*, Nov. 1978.

The Nork Case

My introduction to the questions of hospital and medical staff liability for the quality of patient care was in 1973 in a notorious malpractice case, *Gonzales vs Nork and Mercy Hospital*.⁵

Dr. John Nork performed a laminectomy on Gonzales at Mercy Hospital in Sacramento in November 1967. Dr. Nork had hospital staff privileges to do orthopedic surgery, including laminectomies and spinal fusions. There was evidence that before Gonzales' surgery, Dr. Nork had performed some 13 other laminectomies or fusions at the same hospital, with poor results. His patients suffered grave post-surgical complications, such as arachnoiditis, caudalgia, foot drops, bowel and urinary incontinence, and sexual disabilities. One patient suffered a vertebral fracture during surgery. Several required repeated surgeries, as many as four times. In one nonspinal case, a woman lost a leg as a result of repeated bone grafts on an ankle, in the presence of infection.

The hospital was accredited by the Joint Commission on Accreditation of Hospitals, and it maintained all the relevant committees — such as tissue, infection, utilization and surgical. All of these committees reviewed cases in the then standard manner, but these standard reviews failed to reveal the doctor's lack of skill. At the time of Gonzales' operation, the hospital had no actual knowledge of Dr. Nork's incompetence or of his practices of operating on inadequate findings and falsifying hospital records. A recurrent theme in the case was how such medical misconduct could occur and remain undetected in a well-ordered hospital.

The case was tried against Dr. Nork on the bases of both fraud and negligence, but against the hospital on negligence only. The hospital contended that it was not responsible for the conduct of the physicians on its staff, because they were not its agents, employees or servants. This contention is correct. A hospital is not liable under the doctrine of "respondeat superior" merely because a staff doctor is negligent.⁶ The Latin expression *respondeat superior* is legal shorthand for the rule that a principal, employer or master — the superior — is responsible for the torts of his agent, employee or servant committed within the scope of the subordinate's employment. This rule applies even though the superior himself is free of fault. The rule is centuries old, and its justifi-

cation is that the superior can spread the risks of loss, by insurance or otherwise, as part of the cost of doing business.⁷ *Respondeat superior* had no direct bearing on this case, because the doctor was not an employee of the hospital, but it is peculiarly significant in the development of the law relative to hospital liability.

If a staff doctor is not an employee, what is he? In conventional legal terminology, one is either an employee or an independent contractor. An employer is liable for the torts of the employee, but, subject to very broad qualifications, not for those of an independent contractor.⁸ Although a staff doctor is an independent contractor, he is also a concessionaire or licensee, a person to whom the hospital grants the privilege of practicing medicine within the hospital's premises. The hospital is the occupier of land on which it invites patients into its custody, for treatment by its concessionaires. By granting staff privileges and by taking custody of patients, the hospital incurs the risk of liability for torts committed by the concessionaire, the staff physician, without regard to his status as an employee or independent contractor — if the hospital is subject to the same rules as every other grantor or custodian.

What are the rules applicable to every other grantor of a concession or custodian? In brief, there is but one rule, and that is to use due care to see that those in custody are not harmed and that the concessionaire does not harm the grantor's customers.⁸ The application of the rule can be illustrated by a variety of examples: the common carrier held liable for rape because it allowed a woman to alight at a point known to be frequented by ruffians;* the tavern keeper held liable for battery because he did not protect a patron from a beating by a drunk;¹⁰ the amusement park operator held liable for inattention to the operations of roller coasters or fireworks displays conducted by independent contractors.^{8, 11} On principle, it is undeniable that a hospital owes at least as great a duty of care to a patient to protect him from an incompetent doctor as a railroad does to a passenger, or a barkeeper to a patron or an amusement park owner to a spectator.

Genesis of Hospitals' Liability

Thus the question is whether hospitals are subject to the same rules as everyone else. To answer this question, it is necessary to look to history. As Justice Holmes said: "In order to know what it [the law] is, we must know what it has been, and what it tends to become."¹

Originally there were no special rules exempting hospitals from the rules applicable to everyone else. Under common law, all charities were immune from liability for the negligent acts of their subordinates.¹² Since most hospitals were charities, they, too, enjoyed this general charitable immunity. So special rules for hospitals had to be developed either in cases of noncharitable hospitals,¹³ a category of no practical importance to this discussion, or in cases involving intentional, as distinguished from negligent, torts. The latter category was involved in a case of utmost historical importance, *Schloendorff vs. Society of New York Hospital*.¹⁴

Schloendorff is the archetypical case, decided in 1914 by the late, great Benjamin Nathan Cardozo. It held flatly that a hospital is not liable for the acts of doctors, whether they are agents, "house physicians," or are staff members, "visiting physicians." The plaintiff alleged that two doctors, one a "house physician," and the other a "visiting physician," both procured for her by the hospital, operated on her without her consent. If true, this amounted to a battery, an intentional tort. Judge Cardozo held that the plaintiff's "narrative, even if improbable must be taken as true" and "that the relation between a hospital and its physicians is not that of master and servant. The hospital does not undertake to act through them but merely to procure them to act upon their own responsibility." This is the genesis of the rule that hospitals were not liable for the acts even of those doctors whom they employed — the rule exempting them from the general rule of *respondeat superior*. This exemption was never adopted in California.¹⁵

Other language in the opinion resulted in at least two other rules, which gained wide acceptance for many years: First, the "borrowed servant" rule, that a hospital is not liable for the acts of its acknowledged servants, such as nurses, if they are acting under the direction of the doctor. They became for the time being the servants of the doctor rather than the hospital. California never adopted this rule, either. Instead it has applied the rule of *respondeat superior* to both the doctor and the hospital.^{16, 17} The second rule is that the administrative or housekeeping activities of a hospital must be distinguished from its medical activities, the hospital being liable for the one as any other innkeeper, but not for the other because they were performed through doctors. Although *Schloendorff* was expressly called to its attention in 1945, the California Supreme Court rejected this medical-administrative dichotomy and held, following its own precedents: "a nurse or physician may be the servant of a hospital, thus requiring

* Reference 8, §§314A, 318, 320, 344, 415, 419, 447, 449 (Illustration 1); Reference 9.

In pharyngitis and tonsillitis

...prompt temporary relief
of pain even before
patients leave
your office.

CĒPASTAT[®]
mouthwash/gargle/sore
throat lozenges

Merrell

Proven Anesthetic Effectiveness

Praying the throat with CĒPASTAT brings soothing relief within minutes. Your patients will appreciate this relief while waiting for therapeutic measures to take hold. The well-established anesthetic effects of CĒPASTAT provide soothing temporary anesthesia to the irritated or inflamed oropharyngeal mucosa.

CĒPASTAT in your treatment room . . .

Used as a spray, CĒPASTAT is more likely to deliver the most relief to the painful area of the throat.

Suit the product to the patient . . .

The liquid is best for use at home as a spray or gargle. Lozenges are ideal for patients on the go.

A recommendation is best . . .

It costs less. Keeps the emphasis where you want it . . . on more important counter-measures — your prescription for anti-infectives, for example.

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215



relief of minor
sore throat when
patients want it . . .

stat

When the indications surface...

Net wt 1 oz

Net wt 1/2 oz

Net wt 1/32 oz (approx)

Net wt 1 oz

Net wt 1/2 oz

Net wt. 1/32 oz (approx.)

NEOSPORIN
OINTMENT

POLYMYXIN B-BACITRACIN
TOPICAL ANTIBACTERIAL

NEOSPORIN
OINTMENT

NEOSPORIN
POLYMYXIN B-BACI
TOPICAL ANT

NEOSPORIN[®] Ointment

(Polymyxin B-Bacitracin-Neomycin)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Each gram contains: Aerosporin[®] (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: *Therapeutically*, (as an adjunct to systemic therapy when indicated), for topical infections, primary or secondary, due to susceptible organisms, as in: infected burns, skin grafts, surgical incisions, otitis externa; primary pyoderma (impetigo, ecthyma, sycosis vulgaris, paronychia); secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis); traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically*, the

ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components. Do not use in the eyes or in the external ear canal if the eardrum is perforated.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control

secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

the application of the doctrine of respondeat superior even though they are performing professional acts."¹⁸

To recapitulate: *Schloendorff* held that a hospital was not liable for the acts of a doctor because the doctor could not be its servant. If the hospital was not liable under respondeat superior, clearly it was not liable for the acts of a doctor who was merely an independent contractor, or licensee or concessionaire. But at the time *Gonzales vs. Mercy Hospital* arose, the question was not what the rules were under *Schloendorff*, but whether those rules were still viable. They had little vitality in California; did they have any? There is still no authoritative answer in California,¹⁹ but I held it to be *no*.

Enter the ACS

The first erosion I found in *Schloendorff's* concept that a doctor in a hospital acts solely on his own responsibility is not in any legal material but rather in the history of the American College of Surgeons. The college was an effort to create an organization "devoted completely to the evaluation of professional and hospital standards which would benefit the patient."²⁰ In 1919, while *Schloendorff* was in full bloom, the college adopted its "minimum standard," stating that each hospital should have an organized staff of competent physicians who would adopt rules governing their professional work and who would "review and analyze at regular intervals their clinical experience."^{20(pp221,489)}

The minimum standard was adopted over stiff opposition. It was argued, parallel to Judge Cardozo's thinking, that a hospital was simply a more convenient place to operate than a home. "The hospital's sole obligation was to furnish space with proper heat, light and food for the patient. When these services were paid for by the patient and he was discharged, the hospital's interest and obligation to the patient ceased." Staff meetings were assailed as impositions on busy doctors. Operation reports were an invasion of the patient's privacy.^{20(p205)} Only 89 of 692 hospitals surveyed could completely meet even the simplest requirements. The printed report reciting this embarrassing statistic was suppressed and copies naming the hospitals were destroyed.^{20(p221)}

Nevertheless, the minimum standard was adopted as a "goal to seek."^{20(p221)} The goal was "to standardize hospitals in such a way that the public could know to which hospitals they could go with safety."^{20(pp63, 475-476)} It was to be reached by having organized medical staffs that would "adopt rules,

regulations and policies which would insure the best possible service to the patient."^{20(p221)}

As early as 1913 Dr. Ernest Codman of Boston was urging the "common sense notion that every hospital should follow every patient it treats, long enough to determine whether or not the treatment has been successful and then to inquire if not, why not?"^{20(p116)} (Note: Dr. Codman thought the hospital treated the patient; a year later Judge Cardozo thought it did not.)

The minimum standard's single page became the progenitor of the Joint Commission on the Accreditation of Hospitals' Accreditation Manual and, in 1965, of California Business and Professions Code §2392.5, where parts of it survive verbatim. It is important because it shows how the surgeons were acting to improve hospitals, as a matter of the proper practice of medicine, without legal stimulus, because for many years thereafter the law relieved hospitals of liability for physicians' conduct.

Schloendorff did not receive its legal coup de grace until 1957, when the New York Court of Appeal, in *Bing vs Thunig*,²¹ held a hospital liable for the negligence of a nurse who burned a patient during a surgical operation. The nurse was not acting under the particular direction of a physician. Nevertheless, the hospital argued that her conduct had to be characterized as "medical" rather than "administrative," so the hospital should not be liable. The court found this dichotomy riddled with unworkable, quixotic distinctions and abandoned it. In so doing, it reconsidered *Schloendorff* and put to itself the question: "What reason compels us to say that of all employees working in their employers' business . . . the only ones for whom the employers can escape liability are employees of hospitals?"²¹ It answered its own question by first repudiating Judge Cardozo's proposition that "the hospital does not undertake to treat the patient, does not undertake to act through its doctors and nurses, but undertakes instead simply to procure them to act upon their own responsibility." This conception, said the New York court, "no longer reflects the fact. . . . Certainly, the person who [now] avails himself of 'hospital facilities' expects that the hospital will attempt to cure him, not that its nurses or other employees will act on their own responsibility." It then held:

Hospitals should, in short, shoulder the responsibilities borne by everyone else. There is no reason to continue their exemption from the universal rule of respondeat superior.²¹

Thus *Schloendorff* was interred after 43 years of troubled existence.

The Darling Case

But *Bing vs Thunig* involved an admitted employee and did not itself answer the question of whether a hospital was liable for the acts of a nonemployee, a staff physician. However, its language implied the answer, and that implication was followed in the case of *Darling vs Charleston Comm. Mem. Hosp.*, decided by the Illinois Supreme Court in 1967.²² *Darling* held a hospital liable because it had not required a doctor to follow the hospital's own rules. "Although the legal doctrines expounded in the *Darling* case were neither new nor novel, the application of these doctrines to the medical staff setting . . . gave the case widespread publicity, and shock value."²³

Although *Darling* is the famous case, one even more instructive is *Fiorentino vs Wegner*.²⁴ *Fiorentino* involved a death resulting from a novel surgical procedure performed by a nonemployee staff physician. It held that the hospital was not liable, because the procedure, although novel, was not "per se an act of malpractice," and the hospital had "no reason to know that an act of malpractice would take place." What is important in *Fiorentino* is not its result but its statement of the law.

[A] hospital will not be held liable for an act of malpractice performed by an independently retained healer, unless it had reason to know that an act of malpractice would take place. . . . [A hospital] is not required to pass upon the efficacy of treatment; it may not decide for a doctor whether an operation is necessary, or, if one be necessary, the nature thereof; but it owes to every patient whom it admits the duty of saving him from an illegal operation or false, fraudulent, or fictitious medical treatment. . . . [L]iability does not attach to the hospital unless it knew or should have known that . . . the operation was not permissible under existing standards.²⁴

The key thought in this quotation is what the hospital "knew or should have known." This had already been stated in *Darling*.²² It was developed in 1970 by the Nebraska Supreme Court in *Foley vs Bishop Clarkson Memorial Hospital*.²⁵ If the liability of a hospital were restricted to cases where it had actual knowledge, carelessness would be promoted, for "the less a hospital [knew] about a patient's condition, the safer it [would be] against charges of negligence." The Nebraska court stated that the majority rule applied by most states in hospital cases requires actual knowledge, but that this majority rule "is an exception to the general law of negligence." It then applied what it called the minority rule derived from *Darling*, rejected the majority rule, and overruled prior Nebraska cases. Thus, without citing *Bing vs Thunig*, Nebraska aligned itself with the

New York philosophy that "Hospitals should . . . shoulder the responsibilities borne by everyone else."

A further application of general law to hospitals is that a hospital cannot escape liability merely by doing what all other hospitals are doing. This application of the general law to hospitals was mentioned in *Darling*.²² It has been the law in California since 1956, when the California Supreme Court held in an instrument-count case: "Although . . . practice or custom is some evidence of what should be done and may assist in the determination of what constitutes due care, it does not conclusively establish the standard of care."²⁶ Thus in 1973, (1) the hospital no longer enjoyed a special exemption from general tort liability; (2) liability could result from a failure to follow its own rules; (3) liability could result from a negligent failure to know what its staff doctors were doing, and (4) the fact that the hospital was doing exactly what a hospital approved by the Joint Commission on the Accreditation of Hospitals (JCAH) should have done did not necessarily prove it was not negligent. With these propositions in mind, I shall develop some of the facts of *Gonzales vs Mercy Hospital*.

Nork: The Hospital's Failures

There were instances of violations of rules shown in the case, not with reference to *Gonzales* as a patient as in *Darling*, but with reference to failure to apprehend Dr. Nork before he operated on *Gonzales*. For example, in one prior instance, the hospital pathologist violated an express rule requiring him to report tissue discrepancies; he failed to report to the Tissue Committee that Dr. Nork had removed nerve fibers during a laminectomy.^{5(p190), 27} In another case, the nursing staff failed to report that Dr. Nork allowed his assistant surgeon to leave shortly after a laminectomy was begun and required a surgical nurse to function as assistant surgeon.^{5(p192), 28} There were other unreported or uninvestigated cases, such as unduly protracted hospitalization, infection and unexplained discrepancy between admitting and discharge diagnoses. Had these been explored, Dr. Nork's deficiencies might have been disclosed and acted on much earlier — and prevented his operation on *Gonzales*. Whether such protective action would have been taken presented a difficult problem of proximate or legal causation, which distinguished *Gonzales'* case from *Darling*.^{28(p130)}

To avoid the distinction between *Darling* and *Gonzales'* case on this question of causation, I adopted the approach of *Fiorentino vs Wegner* that a hospital has a duty to save a patient from false or

fraudulent medical treatment of which it knew or should have known. From this it follows that a hospital must maintain reasonable means of acquiring such knowledge. But in 1967, the relevant period, the hospital not only lacked knowledge of Dr. Nork's propensities, it had no means of acquiring it.

Although in 1967 the hospital did follow all of the procedures required by JCAH, those procedures were insufficient to detect an inadequate physician such as Dr. Nork. Dr. Reed M. Nesbit, the hospital's principal witness, said it may take a malpractice case to detect such a doctor.^{5(p145)} Dr. Nesbit is professor emeritus of urology at the University of Michigan, a former president of the American College of Surgeons, a former member of the Joint Commission and, at the time he testified, was Deputy Director of the Commission. He was involved in the case because JCAH wanted to find out how it had approved a hospital where such conduct had occurred. In his own words: "It was incredible to me that the allegations were such as they were [and] that some of the people on the medical staff didn't pick up something on the guy."^{5(pp143-145)}

Shortcomings of JCAH Standards

The testimony of Dr. Nesbit showed that the JCAH standards, which the hospital was following in 1967 as far as the records showed, and their application were deficient in the following respects:

1. The review of cases was predicated on the assumptions that the doctor was reporting honestly and that the records were truthful and accurate. Such assumptions preclude the possibility of discovering fraud.

2. The assumption of honest reporting was carried so far that no comparison of the doctor's progress notes and the nurses' notes was either required or made.

3. The clinical review was subjective and according to the personal standards of the reviewer. As an experiment in court, a highly regarded neurosurgeon reviewed five of Dr. Nork's hospital files the way he would have reviewed them in the hospital in 1967. Giving himself the same time limitations that he was under in the hospital, he could not discover even the grossest deficiency: that all the patients had the same or similar patterns of detailed symptoms. This pattern arrangement of symptoms becomes readily detectable only by setting them forth in tabular form. This simple mode of arraying the symptoms was a device hit upon by the plaintiff's counsel, following a suggestion of his orthopedic expert. Merely by assembling and analyzing the evidence objectively,

a lawyer rather than the doctors discovered that Dr. Nork had been contriving his findings.²⁹

4. The review was based on random sampling of cases in selected areas. Therefore, bad cases were picked up only by chance. To quote Dr. Nesbit: "It is very difficult to get an accurate picture from a random sample on a random sample basis."^{5 (pp174-182)}

5. The review was infrequent. In Dr. Nesbit's opinion, such infrequent review "emphasizes the randomness, if you will, of the sampling."³⁰ On this point, Dr. Nesbit distinguished between teaching hospitals — those having interns and residents — and hospitals without such programs. In a teaching hospital, review is current and frequent, rather than retrospective and rare, and the review does not have to assume the truthfulness of reports by the attending physician as the sole witness, because the patient is under the multiple observation of several witnesses, even though they are students.

6. The review process was casual, hasty and sandwiched between the reviewing doctor's other work.

7. Finally, but equally important, no protocol, profile or record was made of the deficiencies of the doctor being reviewed, so there was no common fund of such knowledge about the doctor available to the hospital.^{5 (p183)}

Adherence to a review system so riddled with inadequacies could not properly be held to comport to a standard of due care. How the review system can be improved and which among various improvements is the best is a subject better left to those most competent and knowledgeable in this field. However, it should be observed that the "Procedure for Retrospective Patient Care Audit In Hospitals," proposed by the Joint Commission in its Trustee, Administrator, Physician Institutes in 1973, is vastly more effective than any of the prior procedures that were placed in evidence in the Gonzales case.

Additional Liability Potential

There is another possible phase of liability. The failure of the hospital medical staff to discover and disclose Dr. Nork's deficiencies raises the possibility that staff members with reviewing responsibilities, who negligently allow a deficient doctor to remain on the staff, may themselves be held individually liable to the patients that the doctor injures.

A formidable argument can be made in favor of the theory that members of the medical staff who negligently fail to detect an incompetent staff member may themselves incur liability to the incompetent's patients even though there was no physician-patient relationship. The absence of the

relationship is, in legal terms, called a "lack of privity." But privity is not an essential basis of tort liability. The American Law Institute, whose Restatements of the Law are generally considered authoritative, says in part:

One who undertakes . . . [the medical staff] to render services to another [the hospital] which he [the medical staff] should recognize as necessary for the protection of a third person [the patient] . . . is subject to liability to the third person [the patient] for physical harm resulting from his [the medical staff's] failure to exercise reasonable care to [perform] his undertaking. . . .³¹

This rule has been applied in a hospital context.³² A patient was injured when she fell into a bathtub because she was frightened when a rat ran across her feet. She sued the hospital and hospital's exterminator. (The implicit analogy of an incompetent doctor to a rat and a medical staff to a pest exterminator is only a coincidence, not a reflection of personal animus.) The United States Court of Appeal held that both the hospital and the exterminator could be liable. The exterminator had never heard of the patient, but the court held the absence of a prior relationship immaterial, because the section of the Restatement of Torts "renders the defense of lack of privity unavailable. . . ."^{32, 33}

The critical issue is not the presence or absence of privity; it is whether the medical staff has undertaken a duty to the hospital to protect the hospital's patients from incompetents. That it has can be argued in at least three ways:

1. From the statute, Business & Professions Code §2392.5. This statute is in part a paraphrase and in part a verbatim adoption of the old "minimum standard." In form it is a definition of one sort of unprofessional practice; that is, practicing in a hospital without a formal medical staff. Considering its origin and form, it seems clear that the statute was intended not only to regulate relations between hospitals and doctors but also to benefit hospital patients.

2. For hospitals accredited by the Joint Commission, the conclusion follows from inspection of the Accreditation Manual for Hospitals. The foreword to the manual states that the certificate of accreditation should be a matter "of reassurance to [the hospital's] patients." This reassurance should follow from the medical staff's duty to "maintain continuing surveillance of the professional performance of all members of the medical staff" and to establish "criteria for evaluating medical care" that should be "strict enough to safeguard patients." When a doctor becomes a staff member, "he accepts medical staff controls as a protection to himself as well as to

others."³⁴ Who these "others" are is clarified by the standard that requires "meetings to review the clinical work of members . . . because the medical staff has overall responsibility for the provision of medical care to patients."³⁴ If the word "others" did not include all hospital patients, the references to safeguarding and reassuring patients would be but idle ornamentation.

3. The conclusion follows from medical staff bylaws — for example, those of the University of California in San Francisco. The preamble recognizes "that the Medical Staff is responsible for the quality of medical care in the Hospitals and Clinics and must accept and assume this responsibility . . . and that the best interests of patient care are protected by concerted effort. . . ."³⁵ The Patient Care Review Committee is "responsible for insuring that the medical care provided . . . is appropriate, of reasonable quality, and provided in an efficient manner."³⁵ Its Medical Care Review Subcommittee is required to help the departments develop "quality care standards, along with appropriate mechanisms to monitor the implementation of these standards in actual practice."³⁵ These rules implement the Principles of Medical Ethics, which require physicians to "safeguard the public . . . against physicians deficient in . . . professional competence." By accepting staff membership, doctors have voluntarily undertaken responsibilities to patients of other doctors, which they must discharge with reasonable care.³⁶

I have found only one reported decision on the question of personal liability of medical staff members, *Corleto vs Shore Memorial Hospital*³⁷ decided by the Superior Court in New Jersey in 1975. *Corleto* held that a plaintiff who alleged injuries from surgery performed by an incompetent doctor could sue some 141 hospital staff doctors, the hospital administrator, the hospital board of directors and the hospital itself for their alleged negligence in allowing the incompetent to remain on the staff. *Corleto* is the straw in the wind indicating how far liability may be extended.

Proving the Hospital Remiss

The difficult problem is not establishing the existence of liability. The difficult problem is the factual one of obtaining evidence that a hospital, its medical staff and its administrator have been remiss in their duties by failing to discover and eliminate incompetent doctors. This was not a great problem in *Gonzales vs Mercy Hospital*, because circumstantial proof of staff derelictions became available by piecing together the evidence in the charts of some 30 of

Dr. Nork's patients. But in a less exaggerated case, the problem may be formidable.

A number of states have enacted legislation intended to encourage adequate staff reviews by making the records and proceedings of such reviews either nondiscoverable or not usable in evidence, or both. These statutes are said to:

Evince a legislative judgment that the quality of in-hospital medical practice will be elevated by armoring staff inquiries with a measure of confidentiality. This confidentiality exacts a social cost, because it impairs malpractice plaintiffs' access to evidence. . . . [Such statutes] represent a legislative choice between competing public concerns. [They] embrace the goal of medical staff candor at the cost of impairing plaintiff's access to evidence.³⁸

The presence of such statutes underscores the theme at the outset of this discussion, that "The life of the law has not been logic; it has been experience." While the courts have been enlarging the scope of liability, the legislatures have been making liability harder to establish. These contrary movements may seem paradoxical, but they are not unusual. Justice Holmes said: "The truth is that the law is always approaching, and never reaching consistency."^{1(p36)} He was unduly optimistic; sometimes it is not even approaching.

The existence of such "protective" statutes and the proliferation of similar statutes ameliorating responsibility for medical malpractice and making malpractice actions more difficult to pursue³⁹ supports the reality that improvement of the quality of care lies with those "who hold the keys to life and death." Statutes give physicians privileges not enjoyed by other litigants, and it is up to physicians to be worthy of those privileges. A legislature could

repeal the privileges if it believed they were abused. Further, there is some suggestion that the courts are skeptical of hospital and medical agency disciplinary proceedings.⁴⁰

Resolving the Liability Problem

The liability of hospitals is, of course, part of the more general problem of the "malpractice crisis." There are various ways of resolving the crisis. To the late Dr. Paul Dudley White is attributed the statement: "The way to cut down the cost of malpractice insurance is to cut down the malpractice."⁴¹ Dr. White's meaning seems clear. Actually it is ambiguous, because one way to cut down malpractice is to lower the standards of care, so that fewer injuries become legally actionable. For example, since a hospital may be liable for violating its own rules, it might attempt to avoid liability by having no rules. James E. Ludlam, legal counsel for the California Hospital Association, considered this possibility and rejected it. He referred a United States Senate committee to:

hospitals that transferred the responsibility for the routine ordering of bed rails from the attending physicians to the nursing staff. This greatly reduced the number of injuries to patients, but from the point of view of limiting liability this was a major mistake by the hospitals. However, it did mean better patient care. . . . Insurability is not determined by losses but by devotion to the professional approach to better patient care.^{17(p1060)}

In short, take care of the patient, and the liability will take care of itself.

Notes and References

Notes and references available from the author.

Make Plans Now
To Attend the Annual State Meeting
May 3-6, 1979
Holiday Inn-Holidome, Hutchinson

KEEPING PATIENTS COMFORTABLE



KEEPING you MORE COMFORTABLE, TOO

When your patient is most comfortable, you are most effective.

Patient comfort, along with your comfort, are prime considerations in this examination table, available to you from Goetze-Niemer.

Places patients in the examination attitudes best for your work, with least discomfort for you.

Whether you are setting up your first office, or are ready to re-equip...whether you lease or buy, with time plans available...let Goetze-Niemer's helpful professionals work with you, providing the impression that you want to make to your patients.

GOETZE-NIEMER COMPANY

P.O. Box 136 — 1701 Brooklyn / Kansas City, MO 64141
Phone: 816-231-1900

HOSPITAL AND SURGICAL SUPPLIES—SINCE 1884

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 7.75% per year and deduct the entire amount from your taxable income—even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment system to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insured safety.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

TOPEKA GREATER KANSAS CITY OLATHE
LAWRENCE MANHATTAN EMPORIA SALINA

"The Most Trusted Name In Savings"

Profession in Crisis

Historical Perspective on Current Criticisms of Medicine

Ed. Note: Jack R. Cooper, M.D., who previously attended this course and found it stimulating, has forwarded the following information.

The National Endowment for the Humanities is sponsoring three tuition-free, one-month seminars for physicians and other health care professionals. Each seminar brings twelve to fifteen participants together with a distinguished humanist for four weeks of full-time study. Applicants should have achieved leadership positions in their fields or show promise of becoming leaders. Students are ineligible. Selection for each seminar is made on the basis of national competition. Participants receive a

stipend of \$1200 from which they are expected to meet their expenses for room, board, and books. In addition they receive reimbursement for travel costs up to a maximum of \$400.

One of these seminars is to be held at The Ohio State University from August 6 to August 31, 1979. The seminar director is Professor John C. Burnham, and the subject of the seminar is "Profession in Crisis: Historical Perspective on Current Criticisms of Medicine."

Deadline for applications is set for sometime in April. Further information may be obtained from Professor Burnham, Department of History, The Ohio State University, 230 West 17th Avenue, Columbus, Ohio 43210.

**Your one source for
complete clinical laboratory services.**

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

[illegible]

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

 THE LATTIMORE-FINK
LABORATORIES, INC.
A DAMON LABORATORY
115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621

NORTHEAST KANSAS INTERDISCIPLINARY CONFERENCE

on

The Support and Rehabilitation of the Cancer Patient

Saturday February 24, 1979
8:00 a.m. — 4:30 p.m.

The Ramada Inn — Downtown Topeka —
Exhibit Arena

Registration Fee — \$10 (includes luncheon)

Continuing Education Credit

AMA-Category 1 6 hours
Nurses 8 contact hours

To register, or for further information, contact
Ted Warren, 1424 W. 8th St., Topeka, KS
66606, (913) 354-6273.

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

Tenuate®
(diethylpropion hydrochloride NF)

Tenuate Dospan®
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache, rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg tablet three times daily, one hour before meals, and in midmorning if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSEAGE: Manifestations of acute overdose include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdose.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.
Licensor of Merrell®

References: 1. Citations available on request—Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

**Whether overweight is a
complicating factor...
or just uncomplicated overweight.**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

Merrell



For prescribing information see opposite page.



The evidence of experience

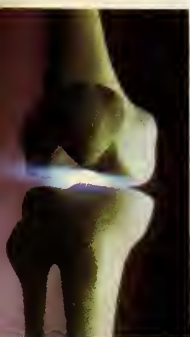
Since October 1974 when Motrin® (ibuprofen) was introduced in the United States, it has been used by more than 6,000,000 patients with rheumatoid arthritis* or osteoarthritis. Rarely has an ethical pharmaceutical product been prescribed for so many patients in so short a time. In addition, more than 450 studies presenting new data related to Motrin have been published.

The 6,000,000 patients already treated with Motrin is an objective measure of physicians' confidence in the ability of Motrin to relieve the pain and inflammation associated with rheumatoid arthritis and osteoarthritis.

So it is not surprising that in this short period Motrin has become the most frequently prescribed alternative to aspirin. Motrin relieves joint pain and inflammation as effectively as indomethacin or aspirin, but causes significantly fewer CNS and milder GI reactions.

However, gastrointestinal bleeding, sometimes severe, has been associated with Motrin, aspirin, indomethacin, and other nonsteroidal antiarthritic agents.

*The safety and effectiveness of Motrin have not been established in patients with Functional Class IV rheumatoid arthritis (incapacitated, largely or wholly bedridden, or confined to wheelchair; little or no self-care).



Motrin^{400 mg} TABLETS

ibuprofen, Upjohn

The confidence that comes from experience—
one more reason to prescribe Motrin.

Please turn page for a brief summary of prescribing information.

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

The confidence that comes from experience—
one more reason to prescribe

Motrin[®] 400 mg TABLETS

ibuprofen, Upjohn

Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin, use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. Aspirin used concomitantly may decrease Motrin blood levels.

Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin (ibuprofen) is gastrointestinal (4% to 16%). This includes nausea[®], epigastric pain[®], heartburn[®], diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness[®], headache, nervousness. **Dermatologic:** Rash[®] (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Incidence: Unmarked 1% to 3%; *3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Suggested dosage is 300 or 400 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day.

How Supplied

Motrin Tablets, 300 mg (white)

Bottles of 60

NDC 0009-0733-01

Bottles of 500

NDC 0009-0733-02

Motrin Tablets, 400 mg (orange)

Bottles of 60

NDC 0009-0750-01

Bottles of 500

NDC 0009-0750-02

Unit-dose package of 100

NDC 0009-0750-06

Unit of Use bottles of 120

NDC 0009-0750-26

Caution: Federal law prohibits dispensing without prescription.



MSD
MERCK
SHARP
DOHME

ALDOMET[®]
(METHYLDOPA/MSD)

TABLETS: 500 mg, 250 mg, and 125 mg

Upjohn

The Upjohn Company
Kalamazoo, Michigan 49001

NIM-3

SERVING YOU IN KANSAS



501 Gage
P.O. Box 399
Topeka, Kansas 66601
913/272-2300

2959 S. Spruce
Wichita, Ks 67216
316-522-8111

9202 Barton
Overland Park, Ks 66214
913-492-5820



Specialized Service

IN

PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction

THE

MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

Professional Protection Exclusively since 1899

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-B, 6600 West 95th Street, Overland Park, Kansas 66212

Telephane: (Area Code 913) 381-4222

contains no aspirin

tablets
Darvocet-N[®] 100 (IV)

100 mg. Darvon-N[®] (propoxyphene napsylate)
650 mg. acetaminophen



Lilly

700565

*Additional information available
to the profession on request from
Eli Lilly and Company
Indianapolis, Indiana 46206*

Eli Lilly and Company, Inc.
Carolina, Puerto Rico 00630

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

**IN KANSAS
YOUR INDEPENDENT AUTHORIZED DEALERS ARE:**

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Euporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street · Chicago, Illinois 60646

An American Company

INDEX TO ADVERTISERS

Beltone Electronics Corporation	87
Burroughs Wellcome Co.	76b
Capitol Federal Savings & Loan Ass'n	82
Goetze-Niemer Company	82
P. W. Hanicke Manufacturing Company	84
Lattimore-Fink Laboratories	83
Eli Lilly Company	86
Mead Johnson Pharmaceutical Division	48a, 48b
Medical Protective Company	85
Merck Sharp & Dohme	84d
Merrell-National Laboratories ...	44b, 45, 46, 76a, 84, 84a
Midwest Pension Planners	41
Munns Medical Supply	85
Northeast Kansas Conference	84
Pfizer Laboratories	44
Roche Laboratories	42, C3, C4
Smith Kline & French	44a
The Upjohn Company	84b, 84c, 84d
Warner/Chilcott Laboratories	47

CLASSIFIED ADVERTISEMENTS

FAMILY PRACTITIONER: 20 miles to Mt. Sunflower, skiing 3½ hrs; country living; excellent income. New hospital/clinic with ICU, CCU, isotopes, xeromammography; visiting specialists, 3 family practitioners, 1 surgeon. Reply to Clitus W. Olson, M.D., 520 Main St., Goodland, KS 67735, (913) 899-5651.

PHYSICIAN ASSISTANT STUDENT wishes to contact prospective employers. Will graduate August 79 with Bachelors degree in Health Sciences/honors, Wichita State Univ. Prior experience as military corpsman in Surgical ICU. Will relocate anywhere in Kansas, but prefer central and east. Salary negotiable. For CV, contact Ronald E. McEwen, 219 W. 15th St., Wichita, KS; (316) 262-8654.

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the JOURNAL.

FOR SALE: Soundscribe equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

Mid-America Cancer Center Program seeking Associate Director for Cancer Outreach. Experience in clinical aspects of cancer, education, and community relations. Contact James T. Lowan, M.D., Director, Mid-America Cancer Center, KUMC, 39th & Rainbow, Kansas City, KS 66103.

NEBRASKA: New hospital emergency department ready to expand to full time coverage. Hours Monday-Friday; no weekends. Two physicians needed for week day/night emergency department coverage. Excellent income plus benefits. Reply to Box 1-0179 in care of the Journal.



Personalities —IN KANSAS MEDICINE

Wesley Hall, Pittsburg, addressed a recent meeting of the Cherokee-Crawford County Unit of the American Diabetes Association. His topic was "Control of Diabetes and Its Relationship to Complications."

Robert Dockhorn, Shawnee Mission, was named national president of the Joint Council of Allergy and Immunology during a recent meeting in Miami, Florida.

Jack Braley, Arkansas City, discussed health problems of the elderly at a recent meeting sponsored by the Senior Citizen's Center.

George J. Farha, Wichita, has been elected to the Board of Governors of the American College of Surgeons.

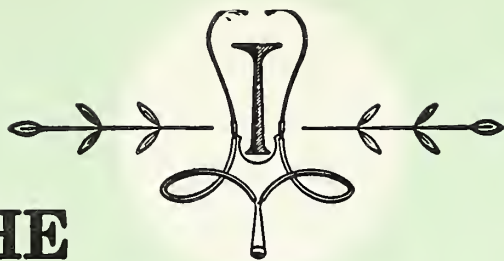
James Wilson has returned to active duty with the military following his resignation as director of the health division of the Kansas Department of Health. He is currently serving at Fort Riley.

Richard A. Guthrie, Wichita, discussed "Heredity and Diabetes" at a recent public meeting in Newton. The meeting was sponsored by the Harvey County chapter of the American Diabetes Association.

Richard Siemens, Lyons, discussed types of arthritis at a recent meeting sponsored by The American Association of Retired Persons and the Valley Blue Birds 4-H Club.

H. L. Songer, Lincoln, spoke on "Care of Skin and Feet" at a recent Diabetic Clinic at the Lincoln County Hospital.

UKSM—Kansas City

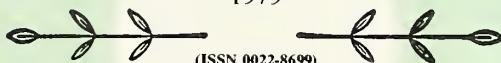


THE
Journal

LIBRARY
U.C. SAN FRANCISCO
APR 2 1979

Kansas
Medical
Society

MARCH
1979



(ISSN 0022-8699)

VOL. LXXX
NO. III

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for March

Thirty-Third Annual University of Kansas School of Medicine—Kansas City Issue	
The Dean's Letter—1979—David Waxman, M.D.	104
Scientific Articles	
Obstetrical Genetics: Techniques for Improving Perinatal Care — Charles R. King, M.D., Kansas City, Kansas	105
Total Care: Recent Advances in the Treatment of Children With Cancer — Stephen D. Smith, M.D.; Janet K. Sturgeon, M.D.; David Rosen, M.D.; Tribhawan S. Vats, M.D.; Robert Trueworthy, M.D.; Nancy Cairns, Ph.D.; Patricia Klopovich, R.N.; Karen Briscoe and Shirley B. Lansky, M.D., Kansas City, Kansas, and Wichita	113
Pericarditis: An Initial Manifestation of Juvenile Rheumatoid Arthritis — Carol B. Lindsley, M.D., and Leone Mattioli, M.D., Kansas City, Kansas	119
Renal Transplantation: A Decade of Experience — James H. Thomas, M.D.; George E. Pierce, M.D.; Judith Greathouse, R.N.; Arlo S. Hermreck, M.D.; Dennis A. Diederich, M.D.; Jared J. Grantham, M.D.; Arnold M. Chonko, M.D.; Virginia J. Savin, M.D.; Winston K. Mebust, M.D., and Donald E. Cross, M.D., Kansas City, Kansas	122
Cardiorespiratory Syndrome: Manifestations in Children With Chronic Upper Airway Obstruction — Kenneth K. Goertz, M.D., and Leone Mattioli, M.D., Kansas City, Kansas	126
Strategy: Improving Adherence to Medication Regimens — Kathleen A. O'Connell, R.N., Ph.D., and Norman G. Marvin, M.D., Kansas City	130
Mechanical Ventilation: New Requirements and Refinements — Hugh S. Mathewson, M.D., and Gareth B. Gish, M.S., R.R.T., Kansas City, Kansas	135
Pediatric Nephrology: A Three-Year Experience in a General Hospital — Harold L. Harrison, M.D., and Michael A. Linshaw, M.D., Kansas City, Kansas	138
Update: Rheumatology Traineeship for the Practicing Physician — Herbert B. Lindsley, M.D.; Nabih I. Abdou, M.D., Ph.D.; Robert Godfrey, M.D., and Daniel Stechschulte, M.D., Kansas City, Kansas	141
Pediatric Breast Disease: A Review of Diagnostic Criteria — David R. Stewart, M.D., and Frederick B. Stehman, M.D., Kansas City, Kansas	143
Neural Tube Defects: Seasonal and Regional Variations in Kansas — Alan E. Organ, M.D., Ph.D.; Lillian Gonzalez-Pardo, M.D., and Kay Vath, R.N., M.S., Kansas City, Kansas, and Topeka	146
Risk Birth Registry: Results of a Pilot Study in Kansas — Grace E. Holmes, M.D.; Denise Brannan Cole, R.N., B.S.N.; Betty W. Taliaferro, R.N., B.S., M.A., and Jeannette L. Downs, Kansas City, Kansas	150
Current Comment	
Rational Use of Aspirin and Nonsteroidal Anti-inflammatory Drugs in Inflammatory Arthritis — R. O. Day, M.B., B.S., and H. B. Lindsley, M.D., Kansas City, Kansas	155
Socio-Economics	
Insuring Honesty in Your Practice	160
P.L. 94-142: Implications for Physicians — Lillian Gonzalez-Pardo, M.D.; Peggy Glazzard, Ed.D., and Sally McCoy, Ph.D., Kansas City, Kansas	161
Miscellaneous	
Advertisers	184
Auxiliary News	96
Classified Advertisements	184
Editorial Comment: <i>Pay Attention</i>	166
Health Care Costs: Successful Containment	169
Impaired Physician Program Resource List	177
Information for Authors	92
Obituaries	168
Personalities	173
President's Message	165

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; **Editorial Assistant:** Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

We can help you answer these Questions . . .

- Q** *Would Incorporating your practice save you tax dollars?*
- Q** *Are you receiving full benefit from Pension and Profit Sharing/Tax Shelters?*
- Q** *Do you need a Keough Plan with higher contribution limits?*
- Q** *Are you receiving Maximum Tax Benefits from fringe benefits?*
- Q** *Are you planning the most effective ways of reducing your Estate Asset Tax Liability?*

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



John E. Lyons
MIDWEST PENSION PLANNERS

Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913/235-5305

THE MESSAGE OF TENSION

HEADACHES
SWEATS
TENSE, TAUT MUSCLES
HYPERVENTILATION
TACHYCARDIA
PALPITATIONS
BURNING IN STOMACH
FULLNESS
FREQUENCY

to relieve psychic tension
and its functional symptoms

VALIUM®
(diazepam) (N)

2-mg, 5-mg, 10-mg scored tablets

VALIUM® (diazepam)

Before prescribing, please consult complete product information, a summary of which follows:

Indications: tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma. may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting, and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-sedation.

Side Effects: Drowsiness, confusion, ataxia.

hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.



Roche Laboratories
Division of Hoffmann-La Roche Inc
Nutley, New Jersey 07110

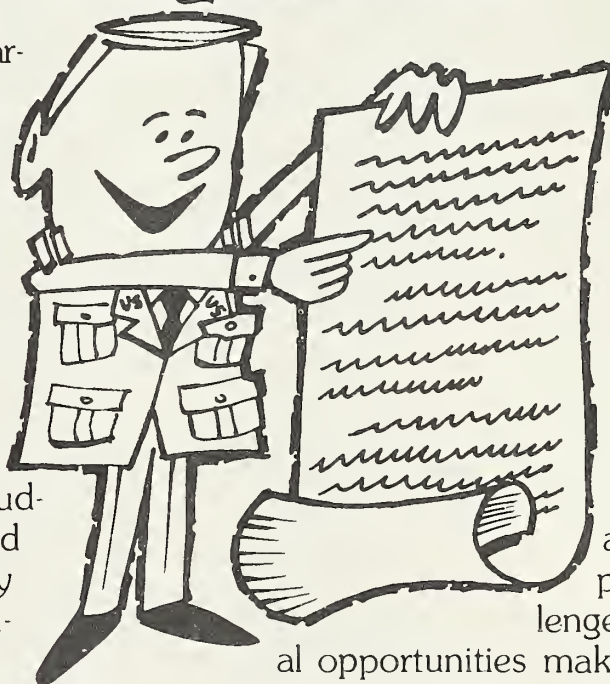
Many physicians are seeking relief from the ever increasing pressures of private practice. If you are a physician, and less than 56 years of age, the United States Air Force Medical Service offers you an alternative and a unique challenge.

The Air Force physician participates in a group practice environment with the entire spectrum of medical specialties available. Air Force Hospitals are accredited and are fully equipped. Health care is provided to every patient without regard for his ability to pay.

Benefits provide a secure and satisfying lifestyle, including 30 days of annual paid vacation, professional pay and recreational opportunities.

Consider the Air Force as an alternative to your present practice. Posi-

An open letter to Physicians



tions are available in primary health care delivery, and a few major medical specialties.

Starting salaries and rank are commensurate with education and experience. Assignment to a specific Air Force Hospital within the United States or overseas may be arranged.

Consider Air Force Medicine. Excellent pay and benefits, professional challenge and educational opportunities make the Air Force Medical Service a viable alternative to private practice.

Capt. Don Towner
Citadel Bldg., 1734 E. 63rd St.
Kansas City, Missouri 64113
(816) 926-5424

Air Force. A great way of life.

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All units of measure must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of letter-size paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

Tenuate®

(diethylpropion hydrochloride NF)

Tenuate Dospan®

(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle, the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecomastia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to
MERRELL-NATIONAL LABORATORIES

Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensor of Merrell®

References: 1. Citations available on request - Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M.: A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

**Whether overweight is a
complicating factor...
or just uncomplicated overweight.**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

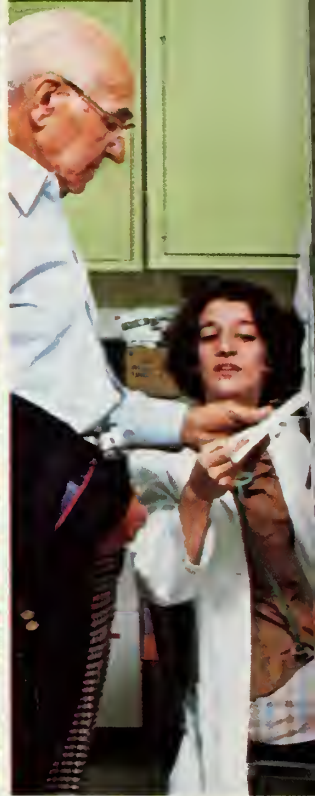
The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

Merrell



For prescribing information see opposite page.



The evidence of experience

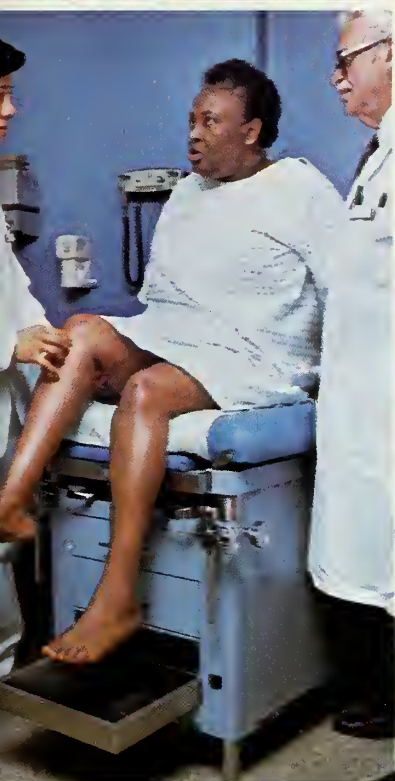
Since October 1974 when Motrin® (ibuprofen) was introduced in the United States, it has been used by more than 6,000,000 patients with rheumatoid arthritis* or osteoarthritis. Rarely has an ethical pharmaceutical product been prescribed for so many patients in so short a time. In addition, more than 450 studies presenting new data related to Motrin have been published.

The 6,000,000 patients already treated with Motrin is an objective measure of physicians' confidence in the ability of Motrin to relieve the pain and inflammation associated with rheumatoid arthritis and osteoarthritis.

So it is not surprising that in this short period Motrin has become the most frequently prescribed alternative to aspirin. Motrin relieves joint pain and inflammation as effectively as indomethacin or aspirin, but causes significantly fewer CNS and milder GI reactions.

However, gastrointestinal bleeding, sometimes severe, has been associated with Motrin, aspirin, indomethacin, and other nonsteroidal antiarthritic agents.

*The safety and effectiveness of Motrin have not been established in patients with Functional Class IV rheumatoid arthritis (incapacitated, largely or wholly bedridden, or confined to wheelchair, little or no self-care).



Motrin[®] 400 mg TABLETS

ibuprofen, Upjohn

The confidence that comes from experience—
one more reason to prescribe Motrin.

Please turn page for a brief summary of prescribing information.

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

The confidence that comes from experience—
one more reason to prescribe

Motrin[®] 400 mg TABLETS

ibuprofen, Upjohn

Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. Aspirin used concomitantly may decrease Motrin blood levels. Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin (ibuprofen) is gastrointestinal (4% to 16%). This includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness*, headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Incidence: Unmarked 1% to 3%; *3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Suggested dosage is 300 or 400 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day.

How Supplied

Motrin Tablets, 300 mg (white)

Bottles of 60 NDC 0009-0733-01
Bottles of 500 NDC 0009-0733-02

Motrin Tablets, 400 mg (orange)

Bottles of 60 NDC 0009-0750-01
Bottles of 500 NDC 0009-0750-02
Unit-dose package of 100 NDC 0009-0750-06
Unit of Use bottles of 120 NDC 0009-0750-26

Caution: Federal law prohibits dispensing without prescription.

NIM-3



MSD
MERCK
SHARP
DOHME

ALDOMET[®]

(METHYLDOPA/MSD)

TABLETS: 500 mg, 250 mg, and 125 mg

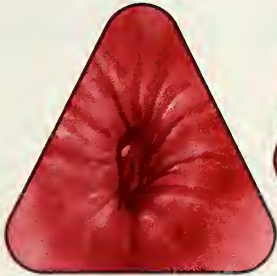
Upjohn

The Upjohn Company
Kalamazoo, Michigan 49001

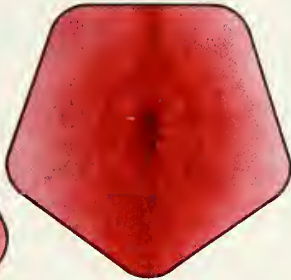
For hemorrhoids and other anorectal conditions



External hemorrhoids



Internal hemorrhoids



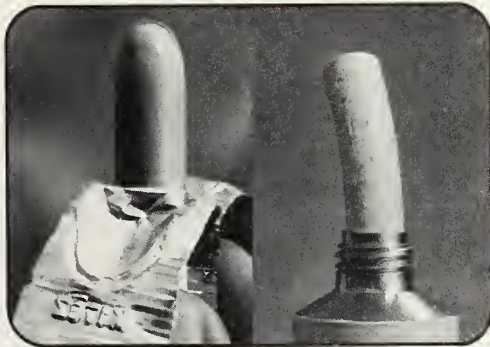
Pruritus ani



Proctitis



Anal fissures



Easy to handle,
easy to insert,
comfortably shaped—
Rx only

Easy to apply,
nonstaining—
Rx only

Prescribe **Anusol-HC[®]** Suppositories/Cream for symptomatic relief

- Effectively reduces inflammation and edema
- Rapidly relieves pain and itching

ANUSOL-HC[®] SUPPOSITORIES

Hemorrhoidal Suppositories

ANUSOL-HC[®] CREAM

Rectal Cream with Hydrocortisone Acetate

CAUTION: Federal law prohibits dispensing without prescription.

Description: Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: bismuth subiodide, calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, bismuth subiodide, propylparaben, methylparaben, polysorbate 60 and sorbitan monooleate in a water-miscible base of mineral oil, glyceryl stearate and water.

Indications: Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas and relief of local pain and discomfort following anorectal surgery.

Anusol-HC Cream is also indicated for pruritus ani. Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol[®] Suppositories or Ointment.

Contraindications: Anusol-HC[®] Suppositories and Anusol-HC[®] Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation.

Warnings: The sole use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts, or for prolonged periods of time.

Precautions: Symptomatic relief should not delay definitive diagnoses or treatment. If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Core should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

Anusol-HC is not for ophthalmic use.

Dosage and Administration: Anusol-HC Suppositories—Adults: Remove foil wrapper and insert suppository into the anus. One suppository in the morning

and one at bedtime, for 3 to 6 days or until inflammation subsides. Then maintain patient comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain patient comfort with regular Anusol Ointment.

NOTE: If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

How Supplied: Anusol-HC Suppositories—boxes of 12 (N 0047-0089-12) and 24 (N 0047-0089-24); in silver foil strips with Anusol-HC W/C printed in block.

Anusol-HC Cream—one-ounce tube (N 0047-0090-01); with plastic applicator, detachable label.

Store between 15°-30° C (59°-86° F).

Full information is available on request.



Warner/Chilcott

Division, Warner-Lambert Company
Morris Plains, N. J. 07950

AN-GP-91

The professional source of anorectal comfort

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

IN KANSAS

YOUR INDEPENDENT AUTHORIZED DEALERS ARE:

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Euporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street · Chicago, Illinois 60646

An American Company



Auxiliary News

I find it hard to believe that the 1978-79 year for Auxiliary is nearing the end and I shall soon be giving you my annual report.

On January 29, 1979, we held our Mid-Winter Board Meeting in McPherson. Enough hardy souls braved another winter storm to allow us to conduct necessary business. We did cancel the afternoon program because the storm was becoming more intense and we all had some distance to drive.

As we wind up our year, there are still a few county auxiliaries that Kathy Wedel and I are scheduled to visit. One of our prime concerns at the present time is membership. In order to retain our delegate quota at both the state and national level we must at least maintain our membership of last year. If we are to be an effective organization we need to increase our membership, and that means the support of every physician's spouse. We realize it is not always possible to actively participate in programs, but it is possible to be a member and pay dues. This kind of support is vital to our existence. I solicit your help in our endeavor to recruit new members. If your spouse is not a member, urge her to join.

We have had a request from the Junior League of Reading, Pennsylvania, seeking permission to copy our Learning Center on Body Pollution (the educational program for fifth and sixth graders on drugs, alcohol, tobacco, and nutrition). Hats off to Marlys Casteel and the other Wyandotte County Auxiliary members who originated and designed this program three years ago. Auxiliary gals are pretty tremendous — or perhaps it's that combination of dedicated physician husbands and dedicated wives that can't be beat.

Thank you for being you and for supporting us.

Sincerely,

Jean Crouch

President

Kansas Medical Society Auxiliary

**Make Plans Now
To Attend the Annual State Meeting
May 3-6, 1979
Holiday Inn—Holidome, Hutchinson**

The Great Laxative Escape



COLACE[®]
dioctyl sodium sulfosuccinate

Colace means escape—from laxative stimulation, from laxative harshness, from laxative habit. Colace gently helps soften stools for easy, painless, unstrained elimination. It's the great laxative escape, from infancy to old age. Available in 100 and 50 mg. capsules. Syrup or liquid.

MeadJohnson

PHARMACEUTICAL DIVISION

©1978 Mead Johnson & Company, Evansville, Indiana 47724 U.S.A. J578-1

This asthmatic isn't worried about his next breath...

**he's active
he's effectively
maintained on**

QUIBRON[®]

Each capsule or tablespoonful (15 ml) liquid contains theophylline (anhydrous) 150 mg and glyceryl guaiacolate (guaifenesin) 90 mg

- theophylline for effective around-the-clock bronchodilator therapy
- 100% free theophylline

Indications: For the symptomatic relief of bronchospastic conditions such as bronchial asthma, chronic bronchitis, and pulmonary emphysema.

Warnings: Do not administer more frequently than every 6 hours or within 12 hours after rectal dose of any preparation containing theophylline or aminophylline. Do not give other compounds containing xanthine derivatives concurrently.

Precautions: Use with caution in patients with cardiac disease, hepatic or renal impairment. Concurrent administration with certain antibiotics, i.e., clindamycin, erythromycin, tetracycline, may result in higher serum levels of theophylline. Plasma prothrombin and factor V may increase, but any clinical effect is likely to be small. Metabolites of guaifenesin may contribute to increased urinary 5-hydroxyindoleacetic acid readings, when determined with nitrosonaphthol reagent. Safe use in pregnancy has not been established. Use in case of pregnancy only when clearly needed.

Adverse Reactions: Theophylline may exert some stimulating effect on the central nervous system. Its administration may cause local irritation of the gastric mucosa, with possible gastric discomfort, nausea, and vomiting. The frequency of adverse reactions is related to the serum theophylline level and is not usually a problem at serum theophylline levels below 20 mcg/ml.

How Supplied: Capsules in bottles of 100 and 1000 and unit-dose packs of 100; Liquid in bottles of 1 pint and 1 gallon.

See package insert for complete prescribing information.

Mead Johnson

PHARMACEUTICAL DIVISION

© 1979 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. MJL 6-4220R4

Ka M P A C

KANSAS MEDICAL POLITICAL ACTION COMMITTEE

1300 TOPEKA AVE.

• TOPEKA, KANSAS 66612

February 1979

Dear Doctor:

The Kansas Medical Political Action Committee is actively soliciting memberships for 1979.

In the 1978 General Election, KaMPAC gave campaign contributions to 7 candidates for U.S. Congress and 63 candidates for the State Legislature. Of those candidates receiving contributions, 50 won election or re-election for an overall winning percentage of 71%. Democrats received 26% of the contributions, while Republicans received 74%. In the 1976 General Election, KaMPAC contributed to 4 candidates for U.S. Congress and 39 candidates for the State Legislature, with an overall winning percentage of 77%. For the first time in its history, KaMPAC contributed to both candidates for one seat. Contributions were given to both candidates for U.S. Senator. The Board of Directors was almost evenly divided as to which candidate to support. The decision to support both candidates in an equal amount was made to preserve KaMPAC; to acknowledge the support of physicians for both candidates, and it seemed to be the best decision at the time. It is unlikely that both candidates for one seat will be supported in the future.

KaMPAC increased its participation in state legislative elections considerably over the 1976 involvement. We anticipate an even greater involvement in state legislative elections in 1980. To be successful, we need your involvement and your contribution.

KaMPAC's primary objective is to elect "friends of medicine" to the U.S. Congress and the State Legislature. To be effective, KaMPAC must have adequate funds available for contribution to candidates. Please consider becoming a KaMPAC Sustaining member for 1979! Ask your spouse to join too!

This year we are offering you the opportunity to join KaMPAC and AMPAC or to join KaMPAC only. The suggested dues amounts are the same in either case. Please check the appropriate box indicating your membership preference when you return the top portion of your dues statement.

If your practice is incorporated, KaMPAC and AMPAC voluntary political contributions should be written on a PERSONAL CHECK.

If you have comments or suggestions as to how KaMPAC could better serve you, please contact the KaMPAC office, 1300 Topeka Ave., Topeka, Kansas 66612.

Sincerely,

Ronald Davis, M.D.
Chairman

HEALTH CENTRAL NEEDS FAMILY PRACTITIONERS INTERNISTS OB/GYN SPECIALISTS PEDIATRICIANS

A federally-qualified, staff model health maintenance organization opening January, 1979.

Nebraska's capital city of 200,000, home of the University of Nebraska.

This represents a ground floor opportunity to practice under ideal conditions in a modern new facility and three excellent hospitals in the community.

Salary commensurate with experience.

Liberal fringe benefit package.

Malpractice insurance paid.

Relocation expenses paid.

Send curriculum vitae, including salary requirements to:

JOHN L. LUCAS, M.D.
Medical Director
HEALTH CENTRAL
17th & N Street
Lincoln, NE 68508

For immediate attention, call: (402) 475-7000

NEW ERA OF MELANCHOLY

America may be entering a new era of melancholy just like the Middle Ages, says a report in the Medical News Section of the Feb. 9 *Journal of the AMA*.

Danielle Turns, M.D., associate professor of psychiatry, University of Louisville, said the prevalence of affective illness appears to be rising, and probably 17 per cent of the US population suffers from it at present.

The chance of someone who lives to age 70 contracting depression during his/her lifetime is now 7.8 per cent for males and 20 per cent for females, Dr. Turns said. She speculated that such factors as increased personal expectations with accompanying greater disillusionment if the expectations are not met may be at the root of the increase. But it would be unusual if a person did not experience occasional minor degrees of depression, she said.

Prevention has not been successful for mental illness, Dr. Turns declared. Heredity, personality type, and early life experiences all are involved. More females than males suffer from it, by a ratio of 3:1.

It is frequently difficult to determine if emotional illness results from or causes a major life change, she said. A patient may lose a job and become depressed; conversely, depression and poor work performance may cause unemployment.



THE MENNINGER FOUNDATION

Continuing Medical Education

Physicians and Their Families: An Experience in Communication
June 18-23, 1979 • Estes Park, Colorado

Physicians and Helping Professionals and Their Families:
An Experience in Communication
August 12-17, 1979 • Estes Park, Colorado

Unless physicians and helping professionals can recognize symptoms of family problems and learn ways of managing these issues effectively, less energy is available for the necessities of an active medical practice. This workshop will be at the YMCA of the Rockies, Estes Park, Colorado. You are encouraged to bring your spouse and children. Families may participate in the workshop and enjoy the recreational opportunities available at the camp and in the area. The June workshop will be directed by Roy W. Menninger, M.D., president of The Menninger Foundation; and the August workshop will be directed by Erwin T. Janssen, M.D., director of the Foundation's Children's Division.

CME Credit Available.

Contact: June Housholder, Division of Continuing Education, The Menninger Foundation, P.O. Box 829, Topeka, Kansas 66601. 913/234-9566, ext. 3685.

Your Patient Saves Dollars with Generics by PUREPAC

Here's Proof!

These products and prices were taken directly
from newspaper advertising by various retail pharmacies.

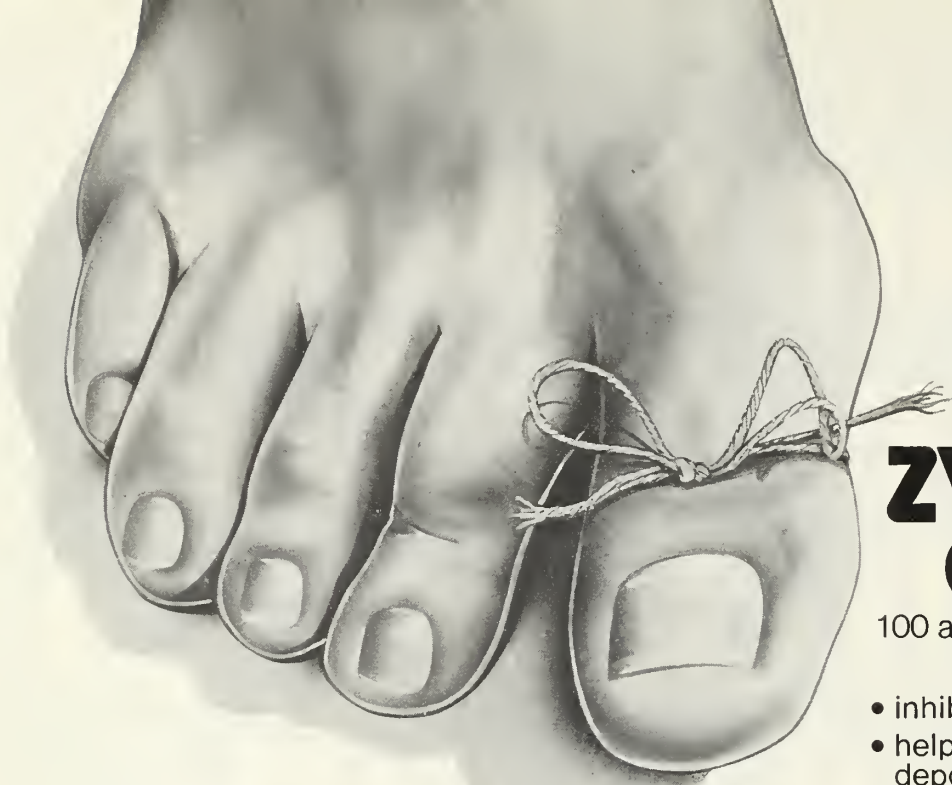
QUANTITY	BRAND NAME	PRICE	PUREPAC GENERIC	PRICE	SAVINGS
30	Polycillin (250 mg.)	\$8.70	Ampicillin (250 mg.)	\$2.40	\$6.30
100	Equanil (400 mg.) [©]	8.09	Meprobamate (100 mg.) [©]	1.83	6.26
100	Darvon Comp. 65 [©]	7.83	Propoxyphene HCl Comp. 65 [©]	4.63	3.20
100	Pavabid (150 mg.)	11.73	Papaverine HCl T.R. (100 mg.)	4.33	7.40
100	Thorazine (50 mg.)	6.03	Chlorpromazine HCl (50 mg.)	3.23	2.80
100	Librium (10 mg.) [©]	7.11	Chlordiazepoxide HCl (10 mg.) [©]	4.89	2.22

The savings add up! So, when you prescribe generics, specify Purepac,
the largest generic manufacturer in America.

Brand names are registered trademarks of
Bristol Labs., Wyeth Labs., Eli Lilly & Co.,
Marion Labs., Smith Kline & French Labs.,
Roche Labs. respectively.



Elizabeth, NJ 07207
AMERICA'S LEADING NATIONAL BRAND OF GENERICS



A reminder

ZYLOPRIM[®]

(allopurinol)

100 and 300 mg scored Tablets

- inhibits uric acid formation
- helps prevent urate crystal depositions in synovia
- reduces risk of uric acid lithiasis

INDICATIONS AND USE: This is not an innocuous drug and strict attention should be given to the indications for its use. Pending further investigation, its use in other hyperuricemic states is not indicated at this time.

Zyloprim[®] (allopurinol) is intended for:

1. treatment of gout, either primary, or secondary to the hyperuricemia associated with blood dyscrasias and their therapy;
2. treatment of primary or secondary uric acid nephropathy, with or without accompanying symptoms of gout;
3. treatment of patients with recurrent uric acid stone formation;
4. prophylactic treatment to prevent tissue urate deposition, renal calculi, or uric acid nephropathy in patients with leukemias, lymphomas and malignancies who are receiving cancer chemotherapy with its resultant elevating effect on serum uric acid levels.

CONTRAINDICATIONS: Use in children with the exception of those with hyperuricemia secondary to malignancy. The drug should not be employed in nursing mothers.

Patients who have developed a severe reaction to Zyloprim should not be restarted on the drug.

WARNINGS: ZYLOPRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. In some instances a skin rash may be followed by more severe hypersensitivity reactions such as exfoliative, urticarial and purpuric lesions as well as Stevens-Johnson syndrome (erythema multiforme) and very rarely a generalized vasculitis which may lead to irreversible hepatotoxicity and death.

A few cases of reversible clinical hepatotoxicity have been noted and in some patients asymptomatic rises in serum alkaline phosphatase or serum transaminase have been observed. Accordingly, periodic liver function tests should be performed during the early stages of therapy, particularly in patients with pre-existing liver disease. Patients should be alerted to the need for due precautions when engaging in activities where alertness is mandatory.

Nevertheless, iron salts should not be given simultaneously with Zyloprim. This drug should not be administered to immediate relatives of patients with idiopathic hemochromatosis.

In patients receiving Purinethol[®] (mercapto-purine) or Imuran[®] (azathioprine), the concomitant administration of 300-600 mg of Zyloprim per day will require a reduction in dose to approximately one-third to one-fourth of the usual dose of mercaptopurine or azathioprine. Subsequent adjustment of doses of Purinethol or Imuran should be made on the basis of therapeutic response and any toxic effects.

Usage in Pregnancy and Women of Childbearing Age: Zyloprim[®] (allopurinol) should be used in pregnant women or women of childbearing age only if the potential benefits to the patient are weighed against the possible risk to the fetus.

PRECAUTIONS: Some investigators have reported an increase in acute attacks of gout during the early stages of allopurinol administration, even when normal or sub-normal serum uric acid levels have been attained.

It has been reported that allopurinol prolongs the half-life of the anticoagulant, dicumarol. This interaction should be kept in mind when allopurinol is given to patients already on anticoagulant therapy, and the coagulation time should be reassessed.

A fluid intake sufficient to yield a daily urinary output of at least 2 liters and the maintenance of a neutral or, preferably, slightly alkaline urine are desirable to (1) avoid the theoretic possibility of formation of xanthine calculi under the influence of Zyloprim therapy and (2) help prevent renal precipitation of urates in patients receiving concomitant uricosuric agents.

Patients with impaired renal function require less drug and should be carefully observed during the early stages of Zyloprim administration and the drug withdrawn if increased abnormalities in renal function appear.

In patients with severely impaired renal function, or decreased urate clearance, the half-life of oxipurinol in the plasma is greatly prolonged. Therefore, a dose of 100 mg per day or 300 mg twice a week, or perhaps less, may be sufficient to maintain adequate xanthine oxidase inhibition to reduce serum urate levels. Such patients should be treated with the lowest effective dose, in order to minimize side effects.

Mild reticulocytosis has appeared in some patients.

As with all new agents, periodic determination of liver and kidney function and complete blood counts should be performed especially during the first few months of therapy.

ADVERSE REACTIONS:

Dermatologic: Because in some instances skin rash has been followed by severe hypersensitivity reactions, it is recommended that therapy be discontinued at the first sign of rash or other adverse reaction (see WARNINGS). Skin rash, usually maculopapular, is the adverse reaction most commonly reported.

Exfoliative, urticarial and purpuric lesions, Stevens-Johnson syndrome (erythema multiforme) and toxic epidermal necrolysis have also been reported.

A few cases of alopecia with and without accompanying dermatitis have been reported.

In some patients with a rash, restarting Zyloprim (allopurinol) therapy at lower doses has been accomplished without untoward incident.

Gastrointestinal: Nausea, vomiting, diarrhea, and intermittent abdominal pain have been reported.

Vascular: There have been rare instances of a generalized hypersensitivity vasculitis or necrotizing angitis which have led to irreversible hepatotoxicity and death.

Hematopoietic: Agranulocytosis, anemia, aplastic anemia, bone marrow depression, leukopenia, pancytopenia and thrombocytopenia have been reported in patients, most of whom received concomitant drugs with potential for causing these reactions. Zyloprim[®] (allopurinol) has been neither implicated nor excluded as a cause of these reactions.

Neurologic: There have been a few reports of peripheral neuritis occurring while patients were taking Zyloprim. Drowsiness has also been reported in a few patients.

Ophthalmic: There have been a few reports of cataracts found in patients receiving Zyloprim. It is not known if the cataracts predated the Zyloprim therapy. "Toxic" cataracts were reported in one patient who also received an anti-inflammatory agent; again, the time of onset is unknown. In a group of patients followed by Gutman and Yü for up to five years on Zyloprim therapy, no evidence of ophthalmologic effect attributable to Zyloprim was reported.

Drug Idiosyncrasy: Symptoms suggestive of drug idiosyncrasy have been reported in a few patients. This was characterized by fever, chills, leukopenia or leukocytosis, eosinophilia, arthralgias, skin rash, pruritus, nausea and vomiting.

OVERDOSAGE: Massive overdosing, or acute poisoning, by Zyloprim has not been reported.

HOW SUPPLIED: 100 mg (white) scored tablets, bottles of 100 and 1000; 300 mg (peach) scored tablets, bottles of 30, 100 and 500. Unit dose packs for each strength also available.

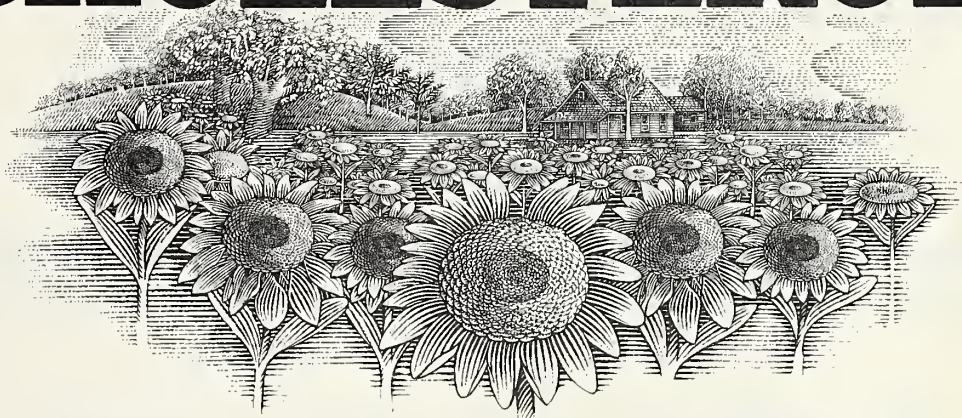
Complete information available from your local B. W. Co. Representative or from Professional Services Department PML.

U.S. Patent No. 3,624,205 (Use Patent)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

GIVE THEM A TOUGH NEW DEFENSE AGAINST CHOLESTEROL.



New Sunflower FarmsTM Margarine.

A light, delicious
margarine containing
pure Sunflower oil.

So high in polyun-
saturates, it can be
more beneficial for
patients following a
total fat modified diet.

No cholesterol.
Higher in polyunsaturates
than any corn oil margarine.



WHY SHOULD A PHYSICIAN BE CONCERNED ABOUT HOSPITAL MANAGEMENT?

Because we think it affects your patient's care.

Employee confidence in hospital management improves morale and attitude: two major prescriptions in the care your patients receive.

Shared Service Systems, a non-profit organization of over 90 health care institutions in the Midwest, can provide complete management for your facility including a highly trained administrator and back-up support if and when required.

At Shared Service Systems, our management philosophy is to provide effective modern management to your hospital so that your patients will continue to receive local, cost effective health services.

We thought you should know about us.

for more information
contact



SHARED SERVICE SYSTEMS
1725 So. 20th Street
Omaha, Nebraska 68108
or Phone: (402) 346-9008

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



East of Hillside on Central • P.O. Box 2, Wichita, Kansas 67201
Central II, First and Hillside • Central Northwest, 21st and Amidon
(316) 686-7111

**Thirty-Third
Annual
University of Kansas
School of Medicine
Issue**

The Dean's Letter—1979

The University of Kansas Medical Center

DAVID WAXMAN, M.D.,* *Kansas City, Kansas*

I APPRECIATE this opportunity to address the readers of *The Journal of the Kansas Medical Society*. There has been considerable progress over the past 12 months in our educational programs for health professional students, support for practicing health professionals, and programs for patient care at the University of Kansas.

The School of Medicine has returned to an expanded four-year curriculum, with 200 students per class. Nearly 650 medical students are now enrolled at the University of Kansas on the Wichita and Kansas City campuses. Over 180 students are enrolled in the baccalaureate degree program of the School of Nursing. Including students in the School of Allied Health, medical residents and graduate students, the total enrollment at the University of Kansas College of Health Sciences is now over 2,100.

The program in Health Care Outreach has delivered a growing assortment of educational support programs to health professionals across Kansas. More than two dozen consultation clinics have been conducted in which medical faculty review patient problems with community physicians. Medical, nursing, and allied health faculty have vastly increased their off-campus, continuing education efforts. Rural Health Weekends and Kansas Health Days have increased contacts between communities seeking medical manpower and students and residents at the School of Medicine. Medical residents have completed several hundred work-days in *locum tenens* service as substitute doctors for practicing physicians in our state.

Outreach courses in graduate nursing have been established in Garden City, Hays, Pittsburg, Salina, and Topeka. Along with the graduate program at the Kansas City campus, and with the Nurse Practitioner program in Hays and Kansas City, significant new opportunities have been created for registered nurses to expand their professional careers. Inservice education programs for nurses in southcentral Kansas community hospitals have been expanded. Similar

programs are being designed for community hospitals in other areas of the state.

A health professional placement program has extended considerable assistance to numerous communities in support of their recruitment efforts.

The Regional Health Education Center in Chanute has brought new professional education programs and community services to southeast Kansas. The success of this regional program will lead to the development of similar centers in other regions of Kansas. These centers will coordinate existing outreach activities in a multi-county region and will work to improve the availability of University resources where needed and when requested.

The University of Kansas Bell Memorial Hospital will open its doors to patients in July 1979, with dedication scheduled in May. This magnificent new building will add significantly to the excellent health care resources now available to Kansans, and will be a superb facility in which to train our future physicians, nurses, and support personnel. Those who are familiar with the parking problems at UKSM will be pleased to learn that a spacious parking garage adjacent to the new hospital will also be completed in 1979.

Also slated for completion in early 1979 is the new Radiation Therapy Center. This facility for the treatment of cancer is destined to be a major resource, not only for Kansas, but for the entire Midwest.

The Kansas Legislature in its last session appropriated funds to plan a new library facility at the University of Kansas School of Medicine. With continuing support, there will be a new health sciences library on the UKSM-KC campus in 1982.

The future for the supply of physicians for Kansas appears to be bright. In addition to expanded residency programs, increased medical school enrollments and physician placement programs, the recently enacted Kansas Medical Scholarship plan will encourage many KU medical graduates to establish practices in Kansas communities where their services are needed. Within months after it was im-

(Continued on page 173)

* The Executive Vice Chancellor, University of Kansas School of Medicine, Kansas City, KS 66103.



Obstetrical Genetics

Techniques for Improving Perinatal Care

CHARLES R. KING, M.D., *Kansas City, Kansas*

CLINICAL GENETICS is most frequently provided by pediatricians and internists. Particularly with the development of antenatal genetic diagnosis, obstetricians have become more intimately concerned with human genetics; but a careful consideration of progress in clinical genetics during the past decade provides several areas of interest to the practicing obstetrician, family practitioner, and other physicians concerned with the health care of women. These developments require that at least a few obstetricians develop subspecialty competence in human genetics. At the University of Kansas College of Health Sciences and Hospitals, a comprehensive program of obstetrical genetics is being developed. This endeavor provides expertise in all of the major categories of human genetics discussed below. Consultation and patient evaluation is readily available to all physicians. Since the long-term management of many of these patients will be provided by the referring physician, it is quite important that the consultant provide adequate follow-up information to the referring physician.

Although genetic disease will be frequently encountered by the practicing physician, single diseases such as phenylketonuria or the Marfan syndrome will be rarely identified. Rapid advances in human genetics have enabled much more precise diagnosis, counseling and — in some instances — therapy of patients with genetic disease. Major de-

velopments in biochemical genetics and cytogenetic banding procedures have enabled this rapid progress. Because of the complexity of these procedures they generally are not, and probably should not be available except in regional centers. Patients with

An increasing number of genetic disorders can be identified by antenatal diagnosis in patients at risk. The physician should have an awareness of the conditions and the availability of testing procedures and facilities including genetic counseling. Informed consent in the management of such patients requires a full risk-benefit disclosure.

these rare “experiments of nature” will most frequently require the aid of a clinical geneticist. The obstetrical geneticist will have special expertise in several aspects of clinical genetics (*Table I*). Consideration of some of these topics will illustrate recent genetic advances and their importance to improved perinatal care.

Pregnancy Wastage

As a conservative estimate, 20 per cent of human conceptions will not result in the delivery of a normal infant. At least 15 per cent of all conceptions end as a spontaneous abortion, and estimates as high as 40-50 per cent have been offered. Fetal loss beyond the first trimester from fetal death in utero or stillbirth adds an

From the Department of Obstetrics & Gynecology, University of Kansas School of Medicine, Kansas City, Kansas.

TABLE I
GENETIC TOPICS OF PARTICULAR INTEREST
TO THE OBSTETRICIAN

- | |
|---|
| A. Antenatal Genetic Diagnosis |
| B. Spontaneous Abortion |
| C. Stillbirth |
| D. Dysmorphology |
| E. Genetic Counseling |
| F. Teratology |
| G. Neoplasia |
| H. Sexual Differentiation |
| I. Effect of Genetic Disease on Pregnancy |
| J. Effect of Pregnancy on Genetic Disease |

additional 2 per cent. Neonates with anomalies contribute an additional 3-5 per cent. Pregnancy wastage has a genetic basis in many instances, and because a considerable recurrence risk may be present, thorough evaluation of such losses is important.¹

Spontaneous abortion has multiple causes — infectious, endocrine, mechanical, metabolic, traumatic, and most frequently cytogenetic.¹⁻⁵ More than 50 per cent of spontaneous abortions will manifest a chromosome error.⁶⁻⁸ All of the major classes of cytogenetic errors — trisomy, monosomy, polyploidy, translocations, duplications, and deficiencies — have been observed (*Figure 1*). This includes commonly observed clinical conditions, like trisomy 21 and the Turner syndrome, as well as errors not reported in liveborn infants (trisomy 5). Twenty per cent of cytogenetically abnormal abortus specimens will have trisomy 16. This error has not been reported in neonates and pathologically an empty gestational sac is frequently observed. More than 90 per cent of conceptions with a 45,X karyotype are lost as first trimester spontaneous abortions; similar losses probably occur with most other cytogenetic errors, but with somewhat less dramatic effect.

Habitual abortion (3 or more spontaneous abortions) is an uncommon but well recognized clinical problem. Multiple factors are important in the causes of this problem. Correction of maternal metabolic, endocrine, or structural defects will benefit many of these patients. Five to ten per cent of such couples will have repeated abortions because one partner or the other will be the carrier of a balanced chromosome translocation.⁹⁻¹² It is important to recognize that either partner may be the carrier, and that generally the carrier of such a translocation will be phenotypically normal. Although specific therapy for such errors is not presently available, it is important to identify such patients to enable accurate re-

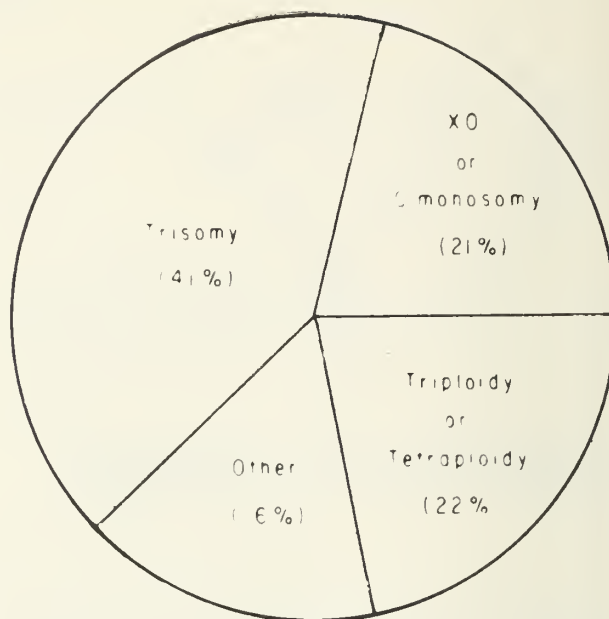


Figure 1. Frequency of cytogenetic errors in spontaneous abortion specimens.

currence risk counseling for the family. In addition, most patients desire an explanation of the causes for recurrent pregnancy loss. Prenatal diagnosis will allow the family with such a translocation the option of termination of an affected pregnancy. Probably each specific translocation will have its own recurrence risk. This risk could range from 0-100 per cent. A zero recurrence risk would be present if non-viable gametes were formed or if embryonic loss occurred prior to implantation. All of the conceptions of a 21;21 translocation carrier will be abnormal. They will have either deficient or duplicated chromosome 21 material. Clinically a 14;21 Robertsonian translocation is the most frequently seen. Such a couple has a 10-15 per cent risk of conceiving a child with Down's syndrome if the mother is the balanced carrier. Should the father be responsible, the risk decreases to less than 5 per cent. This may be related to the fact that multiple sperm participate in the fertilization process, and a normal spermatozoan has a competitive advantage over those that are cytogenetically abnormal. In any event, recurrence risk seems to be dependent on the sex of the translocation carrier.

Data to counsel patients who have had a chromosomally abnormal abortus is sparse, except for translocation carriers as discussed above.¹³⁻¹⁶ In instances where fetal trisomy was identified, there is probably an increased risk for future conceptions with aneuploidy.¹⁴ Antenatal genetic diagnosis

should be offered to such patients. In general, where more than one abortus specimen has been karyotyped from the same couple, an initial chromosomally abnormal fetus is generally followed by a second chromosomally abnormal specimen.^{15, 16} Likewise if the initial fetus was chromosomally normal, the second generally is also normal. The prognosis for future successful pregnancies is better for the woman who has had chromosomally abnormal abortions. Thus, it is not only important to karyotype abortus material for causative reasons, but also to more accurately predict future successful pregnancies for a given family.

The hydatidiform mole is not frequently considered in a discussion of pregnancy wastage, but certainly this event also represents a lost conception. Although rare in the United States, molar pregnancy occurs much more frequently in Orientals. Since progression to invasive trophoblastic disease may occur with an apparently benign mole, further study of this disease is important to the patient and to our understanding of the biology of malignancy.^{17, 18} Our understanding of this phenomenon has been greatly enhanced by cytogenetic study.

Moles that have been studied cytogenetically exhibit either a normal 46,XX karyotype or an abnormal karyotype most frequently triploidy.^{19, 20} The triploid mole has a more benign histologic appearance without evidence of anaplasia. The normal 46,XX karyotype mole microscopically has more profound hyperplastic changes — including anaplastic areas — and has been observed to progress to malignant invasive disease. Careful analysis of cytogenetic and biochemical markers has demonstrated an androgenic origin for complete moles. In other words, they arise following fertilization by either a diploid sperm, dispermy, or duplication of the haploid chromosome set of a sperm.^{21, 22} No contribution from the female genome occurs. Similarly, benign teratomas have a parthenogenic origin.²³

Fetal death in utero and stillbirth are frequently poorly evaluated. This derives in part because of what has been described as an abhorrence for stillbirth by both patients and physicians. Fetal death may arise from apparently non-genetic factors such as abruptio placenta, trauma, or maternal hypertension. A thorough search for the causative basis of such loss is important.²⁴ This is probably particularly true if a geneticist or dysmorphologist does not evaluate the infant.

As outlined in *Table II*, a careful evaluation of such infants will aid in the definition of the cause for such a loss. In addition to a careful description of the

TABLE II
EVALUATION OF THE STILLBORN INFANT

- | |
|-------------------------|
| A. Physical Examination |
| B. Genetic Consultation |
| C. Photography |
| D. Radiography |
| E. Laboratory |
| Cytogenetics |
| Immunohematology |
| Microbiology |
| Metabolic |
| Electron Microscopy |
| F. Autopsy |
| G. Counseling |

infant, photographs — particularly of the facies — are important to enable a trained dysmorphologist to arrive at a retrospective diagnosis. The old Chinese adage that a picture is worth a thousand words is certainly true in this instance. Photographs can be obtained at the time of the autopsy. The autopsies of such infants should be as carefully performed and studied as those of adults. Too frequently description is inadequate and maceration is the only conclusion. This should not be the case. Collaboration with other facilities may be necessary to carry out specific laboratory studies — cytogenetic, microbiologic, metabolic, or electron microscopic. Fresh tissue and special preparation may be necessary to perform these studies. An established protocol should be developed to allow smooth evaluation of such infants. A precise diagnosis is important since many losses may be secondary to correctable or preventable maternal problems — *i.e.*, hypertension and infection. Many such patients will benefit from evaluation by a high-risk pregnancy referral center. In addition, only with a specific diagnosis can the family be adequately advised of a recurrence risk.

Cases of infants with early neonatal death need the same thorough evaluation accorded to stillbirth cases.²⁴ Infants with congenital anomalies or genetic disease require diagnosis and specific counseling for the family. Accuracy of diagnosis is essential, since only with an accurate diagnosis can prognosis, therapy, and recurrence be specifically defined. Consultation should be requested when diagnostic uncertainty is present. In many instances the primary physician need only lay the groundwork for later evaluation and consultation. Frequently he/she will be able to diagnose, treat, and counsel the family. Primary physicians can in many instances provide genetic counseling, but it must be recalled that even common disorders like cleft lip and palate may occur

in over 200 distinctly different genetic syndromes. Consultation with a skilled clinical geneticist may enable more precise diagnosis, therapy, and prognosis.

Rarely is emergency genetic evaluation required for a newborn. Certainly early intervention and therapy is essential for such conditions as phenylketonuria, galactosemia, or hypothyroidism. Dymorphic infants who require major surgical intervention should have a careful genetic evaluation if possible prior to such surgery. A neonate requiring correction of an isolated VSD has an entirely different prognosis than an infant with VSD as one component of the trisomy 13 syndrome. The extreme prognostic differences of normal life expectancy versus almost certain early infant death (trisomy 13) should be conveyed to the parents. Families in such instances may elect not to pursue heroic measures that will not affect prognosis. Bone marrow aspiration and cytogenetic study will allow confirmation of diagnosis in such dymorphic infants within hours of birth.

Mothers who themselves have genetic disease not only risk passing the disease to their offspring, but may have increased potential for complications during pregnancy as well. Mothers with the autosomal dominant Marfan syndrome have a considerable maternal mortality (estimates of over 30%) secondary to enhanced aortic dissection with pregnancy.²⁵ Patients with errors of thyroid biosynthesis will require appropriate hormonal therapy during pregnancy and considerable pregnancy wastage may occur if necessary adjustments of dosage are not made.^{26, 27} Studies of women with phenylketonuria are not adequate to define whether the best fetal outcome occurs when maternal dietary phenylalanine is restricted or maintained at normal levels.^{28, 29} Since significant numbers of PKU children adequately treated during infancy and childhood are now entering adolescent and early adult life, sufficient data is essential to define the risk of fetal damage for such pregnancies. Pregnant women with genetic disease will benefit from consultation and evaluation — preferably prior to pregnancy — to enable the optimal pregnancy outcome. It is important to recall that not only may genetic disease adversely affect pregnancy, but conversely that pregnancy may enhance deterioration of genetic disease.

Numerous compounds, chemicals, and even medications are known human teratogens.³⁰ The advice that all medications are unsafe during pregnancy — although somewhat of an overstatement — is generally the safest policy. Teratogens can produce effects beyond congenital malformations (*Table III*).

TABLE III
EFFECTS OF TERATOGENIC AGENTS

- | |
|------------------------------------|
| A. Decreased Fertility |
| B. Fetal Resorption |
| C. Spontaneous Abortion |
| D. Fetal Death |
| E. Stillbirth |
| F. Intrauterine Growth Retardation |
| G. Premature Delivery |
| H. Congenital Anomalies |

Human teratogenic agents have rarely been evaluated from all these points of view, but certainly most agents that are teratogenic in laboratory animals promote pregnancy wastage by several means.³¹ Several factors are important in determining the teratogenicity of a compound. The host is important, for different species may metabolize the same agent by different means. Even within a species, genetic metabolic differences may enhance or retard the teratogenic potential of an agent. The timing of exposure is important, since the well regulated schema of embryologic development allows a teratogen to act on specific structures only at specific developmental times. In general, teratogens will have more devastating effects during the first trimester when most of the events of organogenesis occur. Obviously the chemical nature of the agent and the amount of exposure will affect the teratogenicity.

One of the best understood human teratogens is thalidomide.³² Exposure to this effective tranquilizer during pregnancy has specific teratogenic effects. Timing of exposure is critical with contact at days 33-47 leading to upper limb defects, and lower limb defects following exposure at 41-48 days. This corresponds to the critical embryologic times for upper and lower limb bud formation. It has been suggested that the primary effect of thalidomide is on the sensory innervation of the limb buds,³² the resultant defects such as phocomelia being secondary to this loss of innervation. Conclusive studies have not yet been completed, but this postulate is certainly closer to an explanation than those available for most other human teratogens. A phenotypic copy of thalidomide embryopathy occurs in some instances of the autosomal dominant Holt-Oram syndrome.

Although the mechanism for other human teratogens is poorly understood, the clinical importance of recognizing these agents is obvious. *Table IV* contains a listing of recognized human teratogenic agents, but considering present knowledge, this is

TABLE IV
HUMAN TERATOGENS

A. Physical Agents	
Hyperthermia	77, 78
Amniotic Bands	98, 99
B. Chemical Agents	
Ethanol	79-85
Vinyl Chloride	96
Heavy Metals	97
Polychlorinated Biphenyls	95
Lithium	56-58
Anesthesia	93-94
C. Radiation	
D. Infectious Agents	
Rubella	67, 68
Herpes	70
Mumps	61
Varicella	65, 66
Cytomegalovirus	63
Toxoplasmosis	64
Listeriosis	69
Syphilis	60
E. Medicinal Agents	
Thalidomide	32
Methotrexate	54
Tetracycline	100
Diphenylhydantoin	36-40
Coumadin	33-35
Diethylstilbestrol	41-44
Progestins	47-51
Amphetamines	91

lowing for a teratogenic effect of epilepsy, congenital malformations occur more frequently in the offspring of mothers treated with anticonvulsants.³⁶⁻⁴⁰ In fact, a specific dysmorphic syndrome — the fetal hydantoin syndrome — occurs in the offspring of mothers receiving diphenylhydantoin. As many as 40 per cent of women utilizing Dilantin during pregnancy may have infants with the fetal hydantoin syndrome; but only about 10 per cent will be severely affected, *i.e.*, clefting, cardiac anomalies, and severe mental retardation.³⁹ Many medications are inadequately tested for their teratogenic potential prior to frequent use during pregnancy. This occurred with the frequent use of diethylstilbestrol during complicated pregnancy in the 1950s. This synthetic agent is teratogenic with several malformations of the Mullerian duct system recognized.⁴¹⁻⁴⁴ More importantly, some of these patients (probably less than 1%) will develop the rare clear cell adenocarcinoma of the vagina at young ages. This is the first example of an agent which is both teratogenic and carcinogenic in humans. Such phenomena have frequently been observed in other species and probably also occur in humans.^{45, 46} Males exposed to diethylstilbestrol also may have anomalies of the genitourinary system and — in some instances — diminished sperm counts and infertility.⁴⁴ Other hormones — oral contraceptives and progestins — are also probably associated with an increased incidence of anomalies and masculinization of female infants.⁴⁷⁻⁵¹ All such agents should be avoided during pregnancy. The diagnosis of pregnancy by lack of withdrawal bleeding from progestins or oral contraceptives should be avoided.

Other medications are known human teratogens (*Table IV*), but space does not permit a complete discussion of each.⁵²⁻⁵⁸ Several infectious agents — rubella, herpes, cytomegalovirus, varicella, mumps, toxoplasmosis, syphilis — are recognized as human teratogens,⁵⁹⁻⁷⁰ as is ionizing radiation.⁷¹⁻⁷⁶ Hyperthermia — whether secondary to maternal infectious disease or the apparently innocuous activity of sauna bathing — is probably teratogenic for humans as well.^{77, 78}

Certain other pleasurable pursuits should also be avoided or at least moderated during pregnancy. A teratogenic effect of excessive maternal ethanol usage during pregnancy has now been defined.⁷⁹⁻⁸⁵ Although this problem arises in the offspring of alcoholic women, the minimum amount of ethanol ingestion during pregnancy necessary to produce such errors is uncertain. Maternal limitation but perhaps not complete elimination of ethanol usage during pregnancy should be encouraged. Infants

most certainly an incomplete list. Exposure to these agents should obviously be avoided during pregnancy. Certain of these contraindicated agents — *i.e.*, Coumadin — may be replaced by alternative agents (heparin) that are safe to use during pregnancy.³³⁻³⁵ Coumadin also produces an increased incidence of fetal loss from retroplacental hemorrhage, stillbirth, and neonatal death presumably from fetal hemorrhagic complications. Some patients may not require continued therapy, and exposure should be limited when this is the case. Patients hopefully will receive consultation and evaluation prior to pregnancy to avoid all exposure when possible. Patients who require therapy to correct or control underlying medical disease will need either to continue the medication knowing the risk of teratogenesis, risk possible deterioration of the disease by stopping medication, or elect not to become pregnant. Many patients with epilepsy may be faced with just these alternatives. Obviously a patient who does not require medication should stop it. Although data is limited, epilepsy itself probably does not increase the potential for congenital anomalies without coincident anticonvulsant exposure. Even al-

with the fetal alcohol syndrome exhibit not only mental retardation and dysmorphic features, but major cardiac and central nervous system anomalies have also been observed. Tobacco usage during pregnancy is associated with an increased incidence of spontaneous abortion, prematurity and low birth weight infants, but not with congenital anomalies.⁸⁶⁻⁸⁹ Cannabis has not been demonstrated to be teratogenic for humans. Other illicit drugs, except amphetamines, also have generally not been demonstrated to be teratogenic to humans;⁹¹ however, certain limb anomalies may occur more frequently in women who have ingested LSD during pregnancy.⁹² Since street drugs are rarely pure, it is probably prudent to avoid usage during pregnancy.

Discussion of potential teratogen exposure during pregnancy should occur with all pregnant or potentially pregnant patients. Decisions to continue or discontinue medication should involve the patient's active participation. In instances where medication must be continued, the patient must understand the risk of fetal damage. For some patients this risk may be unacceptable, and the patient should have the option of pregnancy termination available. Elimination of harmful medications or substitution of other potentially less damaging agents is obviously desirable. Potentially pregnant patients should probably not receive teratogenic agents — radiation, medications — until the absence of pregnancy has been documented.

Antenatal Genetic Diagnosis

The concepts of antenatal genetic diagnosis are probably the most important achievements in clinical genetics in recent years. Improved techniques for biochemical and cytogenetic analysis have established the laboratory basis for this progress. The documentation of the safety of mid-trimester amniocentesis has enabled widespread implementation of these techniques. General indications for these studies are well known (*Table V*), although changes in our understanding of disease pathogenesis are

rapidly adding new diseases to the list of possible mid-trimester diagnoses.¹⁰¹⁻¹⁰⁵ Technological advances with the methods of somatic cell hybridization and the use of endonucleases should also enhance the capabilities of antenatal genetic diagnosis.^{106, 107} Refinement of the capability of cell sorting with the fluorescent activated cell sorter may allow diagnosis by isolation of fetal cells from a sample of maternal blood.¹⁰⁸

Several large series of patients from the United States, Canada, and Europe have defined the frequency of various indications for prenatal study.^{90, 109-111} Evaluation has most frequently been performed for the indication of maternal age. As maternal age advances, the incidence of chromosomally abnormal offspring — particularly trisomy 21 — increases dramatically.^{112, 113} Women age 35 and beyond are generally advised to have amniocentesis. By this age the incidence of trisomy 21 has increased to approximately 1 : 250 deliveries. This figure is derived from previous population studies of liveborn infants. A considerably higher incidence of trisomy 21, which cannot completely be accounted for by preterm pregnancy loss, has been observed in most large samples of prenatally diagnosed patients.¹¹⁴ The complete explanation of this phenomenon is not apparent, unless the incidence of trisomy 21 is actually increasing. In fact, one British study suggests the incidence of detected abnormal offspring is as great in an unselected population as it is when traditional indications for evaluation (*Table V*) are utilized.¹¹⁵ As indicated earlier, a previous chromosomally abnormal conception increases the risk for future anomalous conceptions. Such families will benefit from prenatal diagnosis. Likewise, families at risk for traditional biochemical genetic disease, neural tube defects, and certain other structural defects are presently candidates for antenatal genetic diagnosis.

In most instances antenatal genetic diagnosis will require amniocentesis. This procedure during the mid-trimester requires considerable experience to be consistently productive and safe. The most favorable results with the least potential for complication have been reported by obstetricians performing such studies on a regular basis. The amniocentesis will most frequently be performed at 14-15 weeks gestation with a small bore (22 gauge) spinal needle. Aseptic technique is of course essential. Under such circumstances amniocentesis is an extremely safe procedure for both mother and fetus. Even though amniocentesis is a safe procedure, complications such as amnionitis, placental hemorrhage, spontaneous abortion, premature labor, and fetal injury or

TABLE V
INDICATIONS FOR ANTENATAL GENETIC
DIAGNOSIS

- | |
|--------------------------------|
| A. Maternal Age |
| B. Chromosome Errors |
| C. Neural Tube Defects |
| D. Biochemical Genetic Disease |
| E. Other Anomalies |
| F. Maternal Anxiety |

death may occur.^{116, 117} Large scale collaborative studies under the circumstances outlined above have not demonstrated an increased incidence of fetal loss after mid-trimester diagnostic amniocentesis.¹⁰⁹⁻¹¹¹ Routine ultrasound should also be performed prior to the amniocentesis. In addition to facilitating the technical aspects of the procedure for the physician, ultrasound as discussed below has other important diagnostic uses. Informed consent should be obtained prior to amniocentesis so that the patient will fully understand the indications, limitations, and potential risks not only of the amniocentesis itself but also of any biochemical or cytogenetic studies performed. Only if this is accomplished will the patient be able to give truly informed consent for antenatal diagnosis.

Amniotic fluid obtained for prenatal diagnosis may be analyzed by a number of means (Figure 2). Most diagnoses require *in vitro* culture of amniotic fluid cells to achieve accurate diagnosis. Cultivated cells may be studied with cytogenetic or biochemical means. Because of the rarity of most biochemical genetic diseases, frequent collaboration will be necessary to provide the appropriate expertise and facilities to enable accurate diagnosis. Most of the presently identifiable biochemical genetic diseases are autosomal recessive or sex-linked recessive conditions for which the specific enzymopathy is known. Only rarely have autosomal dominant diseases been identified prenatally (*i.e.*, linkage of secretor status with myotonic dystrophy).

Assay of enzyme levels in uncultured amniotic fluid cells or the supernatant fluid is generally not a reliable means of prenatal diagnosis. Viral cultures may be obtained by this means, however. Presently, the most useful assay on amniotic fluid is the measurement of alpha-fetoprotein (AFP). This alpha-1-

globulin produced primarily by the fetal liver is a particularly sensitive marker of fetal neural tube defects.¹¹⁸⁻¹²⁰ The peak elevation occurs somewhat prior to 14-16 weeks gestation and progressively decreases to term. Virtually all cases of open neural tube defects will demonstrate markedly elevated AFP. Little confusion generally arises between affected patients and the normal control population. A variety of other defects including omphalocele, duodenal atresia, Turner's syndrome, congenital nephrosis, and fetal death may be associated with elevated AFP.¹²¹ In addition, such benign conditions as multiple gestation, mistaken gestational dates, or fetal blood contamination may falsely elevate the amniotic fluid AFP. Routine ultrasonography and cytologic assessment of amniotic fluid for rapidly adhering cells will be helpful in interpreting these results.^{122, 123} Maternal serum AFP appears to be an accurate screening assay for pregnancies at risk for neural tube defects. However, large scale trials have not been performed in the United States.¹²⁴ Questionable results of either amniotic fluid or maternal serum AFP analysis will require specific evaluation and counseling by an appropriately trained clinical geneticist to ensure accuracy of diagnosis.

Ultrasonography has specific diagnostic uses in addition to aiding the performance of amniocentesis.¹²⁵⁻¹²⁷ Gestational age may be accurately defined. Multiple gestations can be identified, and the sites for the multiple amniocentesis necessary to sample each fetus defined. In addition, fetal structural anomalies such as neural tube defects, hydrocephaly, omphalocele, limb lengths, cardiac defects, renal anomalies, and bowel obstruction can all be diagnosed during the mid-trimester. The rapid progress in ultrasound technology over the past few years has produced gray-scale instruments that allow extremely accurate definition of fetal anomalies. The development of "real-time" ultrasonography techniques have added new potential to the identification of fetal anomalies and viability. Ultrasonography is safe for use during pregnancy, and evidence of teratogenicity or damage during human pregnancy has not been presented. Considerable expertise is required to evaluate fetal structural anomalies during the mid-trimester, and patients at risk should generally be referred to a tertiary level care facility for evaluation. The successful development of ultrasound for use during pregnancy has diminished the importance of radiography for prenatal diagnosis.¹²⁷ Certain structural defects — particularly some skeletal dysplasias — are still best defined by radiography, but the number of patients benefiting from such studies will diminish as the sensitivity of

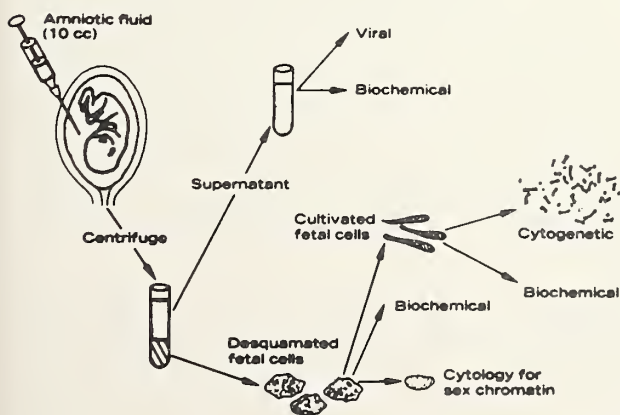


Figure 2. Methods of analysis of amniotic fluid for antenatal genetic diagnosis.

ultrasonography increases. Amniography and fetography may aid the identification of certain gross fetal structural anomalies.¹²⁸ Such studies when observed for evidence of fetal swallowing may prove useful for the evaluation of fetal gastrointestinal anomalies.

Fetoscopy and sampling of fetal blood or tissue is the most recent avenue of antenatal genetic diagnosis.¹²⁹⁻¹³¹ Fetoscopy is presently accomplished with a modified athroscope of 1.7 mm diameter. A 2-mm trocar is used to place the instrument into the amniotic cavity. Rarely is it possible to obtain a complete visualization of the fetus. Specific fetal anomalies such as clefting, extra digits, or myelomeningocele can be defined with this technique.¹²³ Such evaluation may be necessary for some patients with uncertain evidence of neural tube defects. Major technical advances will be necessary to enable complete fetal visualization.¹³²

The most important present indication for fetoscopy is to sample fetal blood. Fetal placental vessels can be seen and directly appreciated with the aid of fetoscopy. Fetal blood sampling has enabled accurate diagnosis of thalassemia and hemoglobinopathies. Analysis of serum markers such as CPK in the fetus at risk for Duchenne's muscular dystrophy may aid the diagnosis of this disease. It is essential to realize that this particular diagnosis is still an experimental procedure, and diagnostic errors have occurred. Various other genetic diseases where the basic defect is not expressed in amniotic fluid may be successfully diagnosed by fetal blood components or serum (platelet studies in glycogen storage disease type I or clotting studies with hemophilia). Blind aspiration of fetal blood from the anterior placenta may be necessary in some instances to obtain a fetal sample.¹³³ Fetal tissue specimens may be particularly useful for the diagnosis of disease with specific histochemical or histopathologic abnormalities, such as the Harlequin fetus. The full potential of fetoscopy has most certainly not been completely realized.

Complications occur more frequently with fetoscopy than with routine amniocentesis. In part this is due to operator inexperience with the procedure. The larger diameter instrument as compared to the 22-gauge needle used for amniocentesis increases the potential for uterine or fetal trauma. As experience with fetoscopy has been gained, the fetal loss rate has decreased to about 5 per cent. In addition, around 10 per cent of continuing pregnancies have resulted in pre-term delivery.¹³⁰ Fetal loss has resulted from a variety of problems including amnionitis, placental hemorrhage, fetal exsanguination, and spontaneous

labor. Although fetal losses may diminish with continued accumulative experience, the present loss rate is considerably less than the 25 per cent or greater risk that is present for most genetic disease for which fetoscopy is performed.

Antenatal genetic diagnosis has uses beyond simply identifying the fetus at risk. It should be remembered that the vast majority of infants studied will be normal. Not all pregnancies identified with defects need be terminated. The ultimate decision to terminate a pregnancy must rest with the individual family. Defects that are surgically correctable — *i.e.*, omphalocele or diaphragmatic hernia — are important to diagnose prenatally because delivery may then occur at a facility where pediatric surgical expertise is immediately available. This will enable the optimal outcome for the affected infant. Certain biochemical diseases such as galactosemia may have appropriate therapy started during pregnancy or immediately following delivery. In utero therapy will become more important as we gain more expert understanding of the biochemistry of various metabolic errors. In utero therapy presently includes transfusion for erythroblastosis fetalis and vitamin B₁₂ administration for the vitamin B₁₂ responsive form of methyl-malonic aciduria. Other examples of the provision of gene products or cofactors to the fetus with metabolic disease should soon be developed.

Many additional aspects of the application of genetics to improved perinatal care could be discussed. Consideration of the general topics of pregnancy wastage and antenatal genetic diagnosis as discussed above will enable an improved quality of medical care for mother and fetus. Application of the rapidly developing knowledge in these areas by physicians concerned with perinatal care will enable the optimal outcome of each individual pregnancy.

(Reading List on page 125)

Buy U.S. Savings Bonds

Total Care

Recent Advances in the Treatment of Children With Cancer

STEPHEN D. SMITH, M.D.; JANET K. STURGEON, M.D.; DAVID ROSEN, M.D.;*
TRIBHAWAN S. VATS, M.D.; ROBERT TRUEWORTHY, M.D.; NANCY CAIRNS, Ph.D.;
PATRICIA KLOPOVICH, R.N.; KAREN BRISCOE and SHIRLEY B. LANSKY, M.D.,
Kansas City, Kansas

CHILDHOOD CANCER treatment has changed dramatically in the past few years. Advances in immunology, pathology, and chemotherapy have contributed significantly to the overall understanding of cancer, and the prognosis for most children with cancer has been greatly improved. Many children are now being cured of cancers that have only recently shown initial responses to drug therapy. National protocols for some solid tumors have been developed, and the results of these studies are showing great promise for the control of Wilm's tumor, rhabdomyosarcoma, and Ewing's sarcoma.¹ At the University of Kansas Medical Center, a cancer care team has been working to improve both the quality and duration of life for the child with cancer. The purpose of this report is to present an overview of the total treatment of the child with cancer with emphasis on recent advances that have occurred both on a national and a local basis. Acute lymphoblastic leukemia and brain tumors are discussed in some detail, for they are the most common childhood malignancies.

Each year one in 10,000 children in the United States develops some form of cancer.¹ Although improvements in treatment have decreased the mortality from this disease, cancer is still second only to accidents as the leading cause of death in children aged 1-14 years, with a mortality rate of 5.6/100,000/year. A child has a one in 600 chance of developing cancer during the first 14 years of life. Leukemia, lymphoma, and brain tumor account for about two thirds of all cases of childhood cancer, with the remaining one third comprised of all the other types of childhood malignancies. The cancer care team is a vital part of pediatric health care

because of this incidence of cancer in the pediatric population.

Cancer Care Team

Most pediatric cancer care teams consist of a pediatric oncologist, a pediatric surgeon, and a radiation therapist trained in the treatment of pediatric malignancies. At the Medical Center, this team also includes a child psychiatrist, a child psychologist, a

The overall prognosis for children with malignancies continues to improve. However, subtypes of these malignancies are now being recognized which appear to have their own prognosis and to require specific therapy. Acute lymphoblastic leukemia and brain tumors, the most common childhood malignancies, are discussed.

lay expediter, two nurse clinicians, and a financial advisor. All of these team members are involved in the care of each child. The diagnosis of cancer is a tremendous burden for the family of such a child. The emotional, financial, and physical needs of the family must be recognized and dealt with in all phases of the disease. To this end, all members of the cancer care team have an equal share in the total care of children so afflicted.

Once cancer is diagnosed, the child and the family are told of the diagnosis, prognosis, treatment, and possible complications of the disease and its treatment. Many hours are spent by the attending physician to inform the patient and both parents about the complexities of the disease and its treatment. Group meetings are held on the oncology clinic days (three/week) for the parents to meet with other parents and discuss the many problems in caring for a child with cancer. There is a weekly play group for the children (both inpatients and outpatients), and their siblings are encouraged to attend. The adolescents have formed their own group — Youth Against Cancer (YACs) — which meets regularly and has

* Associated with UKSM-Wichita.

From the Department of Pediatrics, Division of Pediatric Hematology-Oncology, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Smith, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

TABLE I
TESTS TO BE DONE ON BONE MARROW
LYMPHOBLASTS

1. Cytochemical stains
 - A. PAS
 - B. Diesterase (non-specific and chloroacetate esterase)
 - C. Sudan black
 - D. Acid phosphatase
2. Cell surface markers
 - A. Surface immunoglobulins
 - B. Fc and C₃ receptors
 - C. Sheep RBC receptors
 - D. Ia antigen
3. Chromosomes
4. Intracytoplasmic IgM
5. In vitro culture of malignant lymphoblasts

planned parties, garage sales, and panel discussions. The children and all family members are encouraged to verbalize concerns so that the team can help find solutions to the many problems of living with cancer.

Leukemia

Childhood leukemia is usually acute lymphoblastic leukemia (ALL). This disease is an abnormal growth and proliferation of bone marrow lymphoblasts, and the children routinely present with evidence of bone marrow failure (*i.e.*, anemia, thrombocytopenia, granulocytopenia). Bone marrow aspirate shows replacement of the normal marrow by malignant lymphoblasts. Recent immunologic studies have shown that childhood ALL is not one disease; at least four subtypes exist.² These subtypes are important from a prognostic and therapeutic point of view.

Once morphologic examination of the bone marrow has confirmed a diagnosis of leukemia, it is important to subclassify this leukemia accurately. Baseline tests essential for subclassification of leukemias are listed in *Table I*. Cytochemical staining will differentiate ALL from the acute non-lymphoid leukemias (acute myeloid leukemia, acute monocytic leukemia, acute myelomonocytic leukemia). ALL is sudan black and diesterase negative and PAS positive, while the non-lymphoid leukemias are PAS negative and sudan black or diesterase positive. Often the cytochemical stains are all negative in ALL, but the presence or absence of PAS positive granules does not affect the prognosis of the disease.

The cell surface studies differentiate lymphoblasts with T (thymus derived), B (bone marrow derived), pre-B and null cell characteristics (*Table II*). About

TABLE II
CELL SURFACE PATTERN OF T, B, PRE-B AND NULL
CELL LEUKEMIA²

	T	B	pre B	Null
Rosettes with sheep RBC	+	-	-	-
Surface immunoglobulin	-	+	-	-
Cytoplasmic IgM	-	-	+	-
Ia antigen	-	-	+	+

15-25 per cent of childhood ALL has T cell markers, and such children have a very poor prognosis.² They uniformly respond well to induction therapy, but usually relapse after a few months, and almost all die of progressive disease within two years. Only a few (1-3%) of children with ALL have B cell disease, and this entity appears to be closely related to Burkitt's lymphoma. Until recently, B cell ALL had a poor prognosis, but a regime that includes high dose methotrexate now appears to be highly effective against this disease.³ The pre-B subtype has recently been identified and may represent up to 20 per cent of the children with ALL. These cells contain cytoplasmic IgM and appear to be a precursor of the immunoglobulin producing B cells.⁴ Most of the children (>70%) have null cell leukemia, and most have a very good prognosis. Chromosome analysis of the malignant lymphoblasts will define patients with chromosomal abnormalities such as the Philadelphia (Ph¹) chromosome. This specific chromosomal defect is classically associated with chronic granulocytic leukemia (CGL), but some children with apparent ALL have this defect. Whether such children presented with a blast phase of CGL or had a Ph¹ positive ALL is not clear at this time. Additionally, culture of the malignant lymphoblasts from childhood ALL has recently been accomplished.⁵ This technique shows much promise, and specific tailoring of antileukemic therapy may be a possibility in the near future.

Once the disease is completely defined, therapy is initiated. There are three phases of treatment for ALL: induction, CNS prophylaxis, and maintenance drug therapy. The leukemic cell burden at diagnosis is 10¹² cells and induction is a two-log kill of these cells.⁶ Induction is obtained in about 95 per cent of the children with the use of vincristine and prednisone with or without a third agent. The disease is usually brought under control within 28 days, and at this time the bone marrow often appears to be completely normal (M-1). However, a significant tumor

cell burden (10^{10} cells) still exists at this time, and if chemotherapy is not continued, the bone marrow will be replaced by leukemic cells again within one to two months. Once the bone marrow is normal, maintenance therapy is started — usually 6-mercaptopurine (6MP) given daily by mouth — and CNS prophylaxis is administered.

One of the most significant advances in the treatment of childhood ALL has been the institution of prophylactic CNS therapy.⁶ If CNS prophylaxis is not given, over 50 per cent of the children will develop overt leukemic involvement of the meninges within the first year of treatment. If CNS disease occurs, a bone marrow relapse routinely occurs within one to two months. CNS prophylaxis is thus given to all children with ALL. Two basic types exist. The first type combines skull irradiation with 5 intrathecal injections of methotrexate; this therapy is completed within two to three weeks. The second type uses intrathecal medicines on a weekly basis for four weeks and then given every two months for one to three years. Both regimes have been effective and are now being compared for long-term side effects. Once CNS prophylaxis is complete, oral methotrexate (MTX) is added as a second maintenance drug. These drugs (MTX, 6 MP) are continued for three years or until a relapse occurs. If the leukemia should progress while the patient is on these maintenance drugs, then the disease is re-evaluated and second line drugs are initiated.

If the patient remains in complete remission for three full years, he is evaluated for discontinuation of maintenance therapy. A repeat bone marrow examination, spinal tap, and bilateral testicular biopsy are performed looking for evidence of residual disease. The testicular biopsy has recently been adopted as a routine evaluation of residual disease because of the relatively high number of relapses (up to 20% in some series) following discontinuation of chemotherapy.

The prognosis for ALL in childhood is based upon many factors. Null cell leukemia has a better prognosis than both the T and B cell types. The age at diagnosis and the height of the initial WBC affect prognosis. The children between age three to five years with WBC of less than 10,000 at diagnosis appear to do the best. However, CNS disease or massive organomegaly (liver or spleen below the level of the umbilicus) adversely affect prognosis regardless of age. In children with the best prognosis, 50 per cent have obtained the five-year survival mark (3 yrs on chemotherapy, 2 yrs off) with no evidence of disease recurrence. Since leukemia is such a rapidly growing cancer, it is hoped that the

children so treated are “cured” of their malignancy, but many more years of observation will be needed to establish this as fact. Of the children diagnosed today with null cell leukemia who have good prognosis parameters at diagnosis, it is projected that 80 per cent will be in complete remission five years from now.

Effective treatment of patients with poor prognostic factors has only recently become available. More aggressive chemotherapy regimes must be administered to control the patient with a larger tumor cell burden (high WBC, massive organomegaly, CNS disease) at diagnosis. Specific regimes of treatment for T and B cell leukemia³ have been developed, and their results have greatly improved the prognosis for these subtypes of ALL.

Brain Tumors

Brain tumors are a common neoplasm in children, comprising about 9-20 per cent of all childhood tumors.¹ The tumors may occur in the newborn, but occur most frequently between five to ten years of age. The common tumors in children include gliomas, medulloblastomas, ependymomas, astrocytomas, craniopharyngiomas, and optic nerve gliomas.

A child with brain tumor is brought to a clinician because of symptoms produced by the growing tumor. These symptoms may be produced by invasion of actual structures or by increased intracranial pressure and shift of normal structures. These symptoms and signs vary from a tense bulging fontanelle in infants to headache, vomiting, impaired vision, cranial enlargement, convulsions, and mental disorders in older children. The differential diagnosis should include infectious causes (meningitis, brain abscess), non-malignant space-occupying lesions (subdural hematoma, congenital malformations), lead encephalopathy, and pseudotumor cerebrii. Also, the differential must include tumors (such as rhabdomyosarcoma, Ewing's sarcoma, osteogenic sarcoma) that may metastasize to the brain.

Diagnostic tests should include skull x-rays, CT scan, EEG, brain scan, angiograph, and air contrast studies. Clinical laboratory evaluation of the cerebral spinal fluid (CSF) is very helpful but collection of this fluid should be done with great caution, even in patients with normal intracranial pressure, and a minimal amount of fluid should be withdrawn. The CSF should be tested for lysozyme, polyamines and desmosterols, and the fluid should be cytocentrifuged for pathologic evaluation of the cells. These tests have proved helpful both in the diagnosis and in following the clinical course of these tumors.^{7, 8}

Surgical excision of the tumor is the treatment of choice but cannot be carried out in the majority of situations due to the location of the tumor, and complete surgical removal is very rare. Radiation therapy is the second and most commonly used modality. This mode of therapy has its limitations due to the damage to normal brain tissue if safe limits are exceeded.

In contrast to other tumors, the chemotherapy of brain tumors has lagged far behind and has not shown any impressive results yet. Single agents such as CCNU, BCNU, methotrexate, procarbazine, vincristine and VM-26 have been shown to increase the survival of children with brain tumors. Combination therapy tried in treating brain tumor has met with less success than in leukemias and lymphomas. Procarbazine, CCNU, and vincristine in combination achieved a 60-per cent response rate, with median duration of response being nine months.⁹ Various agents have been used intra-arterially in the hope of achieving higher concentrations, but success has been limited. Intraventricular and intrathecal mode is thought proper for drugs that do not cross the blood brain barrier or have extreme systemic toxicity. Toxicity of chemotherapeutic drugs such as methotrexate, in conjunction with radiation, has been relatively disabling in the form of leukoencephalopathy and dementia.

The Medical Center brain tumor therapy team — comprised of an oncologist, neurosurgeon, neurologist, radiation therapist, and radiation biologist — attempts to improve clinical care of patients by finding optimal drug schedules. A brain tumor tissue culture laboratory has been established and effects of various drugs in vivo and in vitro, alone and in combination with radiation therapy, are being studied.

Infections

Infection is the major cause of death and the most frequent cause of serious complications in children with cancer. The normal host defense mechanisms are altered in these children either because of chemotherapy, radiation therapy, surgery, or the cancer itself. These alterations include a decrease in number and function of the circulating granulocytes and defective cell-mediated and humoral immunity. The children must be evaluated very carefully when they present with a possible infection.

When a child with cancer develops fever (>38.5 C), a physical examination is performed and the total granulocyte count measured (total WBC \times % segmented neutrophils = total granulocyte count). If the total granulocyte count is above 1000, appropriate

cultures are obtained and antibiotic administered orally if there is evidence of a localized infection. If, however, the total granulocyte count is below 1000, the child is admitted to the hospital and antibiotics are administered intravenously.

Controlled studies at the National Cancer Institute have revealed the total granulocyte count to be the pivotal point in the treatment of the febrile child with cancer. It was found that such children had an 80-per cent chance of developing a severe infection when they were febrile with a granulocyte count below 1000.¹⁰ It was also found that empiric administration of intravenous antibiotic, when the fever developed significantly, reduced the mortality from bacterial infections (especially pseudomonas). In one study, 50 per cent of the patients with pseudomonas sepsis died within 72 hours of a positive blood culture when antibiotics were held pending culture results.¹⁰ Thus, early initiation of antibiotics, before culture results are available, is critical in such patients.

Fungal, viral, and protozoal infection also develop in the immunosuppressed children. *Candida albicans* is the most frequent fungal infection. An overgrowth of *candida* in the mouth is often present while the child is on prednisone therapy. The child may or may not be symptomatic, and the *candida* will resolve when the steroids are tapered. Aspergillosis pneumonia, cryptococcal meningitis, and disseminated histoplasmosis also occur in these immunosuppressed patients.

The child with cancer can develop severe infections with common viruses. Live virus vaccines are not administered to these children, for vaccines have been associated with fatalities in a few cases. The children who develop varicella have a significantly higher chance (33%) of developing a complication, compared to the normal child (5%).¹¹ Also, the mortality rate from varicella is 20 times higher than in the control subjects without cancer. Because of these data, a vaccine — Zoster Immune Globulin (ZIG) — is administered to children who are exposed to varicella and who have not had this disease before. The ZIG is obtained from the Center for Disease Control (CDC), and must be given within 72 hours after exposure to be effective in decreasing the complications of varicella.

Children with cancer are also prone to develop pneumocystic carinii pneumonia. It occurs in 4-21 per cent of the children with malignancies and presents as a five lobe interstitial pneumonia. The diagnosis can be made by pathologic examination of the lung tissue, and the treatment is trimethoprim/sulfamethoxazole (TMP/SMZ). Recently a randomized double-blind placebo-controlled study with

TMP/SMZ indicated its effectiveness in preventing pneumocystis carinii pneumonia.¹² Current studies are under way here to determine if prophylactic TMP/SMZ or TMP alone will also decrease the incidence of bacterial infections.

School Program

Most children with cancer can return to their homes, schools and communities for prolonged periods of time, during which they live a normal or near normal life. In children, one of the most critical measures of success in psychosocial rehabilitation is academic performance; school is the work of children.¹³ The cancer care team at the University of Kansas Medical Center has established a program of intervention to facilitate the child's successful return to school.

By studying cumulative school attendance and achievement records of patients routinely at the time of diagnosis and at the end of each school year thereafter, it is possible to identify the following problems: (1) some children have difficulty in maintaining school attendance even when medically able; (2) many of the patients' academic grades and standardized achievement scores decline; and (3) school personnel usually are not knowledgeable about childhood cancer, therapy, and consequential effects on the child's academic career.

A program of intervention was, therefore, developed to alleviate these problems. The program includes the use of a conference — shortly after diagnosis — with the child's teacher(s), principal, school nurse and other appropriate personnel, either in person or by phone, depending on distance. Practical suggestions are offered for handling the child with cancer on a day-to-day basis in school and answering questions from classmates. Further written information regarding the child's disease, treatment plan, drugs, and other data is provided for the school nurse. Also provided are the phone numbers of Medical Center personnel with encouragement to contact if needed. Special needs, such as psychoeducational testing to pinpoint a child's academic strengths and weaknesses, or transportation for the child of indigent parents, are identified. Finally, provisions are made for continuing communication with school personnel as needed, *e.g.*, if the child has a relapse or significant change in therapy. The intervention program has been effective in the majority of cases. Both school personnel and parents have expressed gratitude for the help in managing the child at school. Most important, the patients' school attendance and achievement have improved significantly.

The Dying Child

Even though the prognosis for children with cancer has improved greatly in the past twenty years, cancer is still the second leading cause of death in children under 14 years of age. Until recently, most of the deaths among our pediatric cancer patients here occurred in the hospital. This situation, more often than not, resulted in the scattering of family members and prolonged stress for the family unit. Typically, the dying child and his mother (and on occasion, father) spent weeks, even months, in the hospital on a 24-hour basis. Other children in the family were sent to the homes of relatives or friends until the brother or sister died and the parents could return home. For just such reasons, a program has been implemented for children whose parents wish to care for them at home until death occurs.

The purpose of the home care program is to provide continued medical and emotional support to the child dying of cancer in the home rather than the hospital setting. The program identifies the needs of the child and family, and coordinates the meeting of these needs by local as well as Medical Center personnel. The child with late stage cancer often suffers from chronic bone pain. Methadone is very useful in controlling this type of pain, for it has few side effects, it can be given orally, and it is effective in controlling even severe pain. The child's parents are provided with the home telephone numbers of several members of the pediatric oncology team. They also have 24-hour access to one of the medical personnel via a beeper system. All of these people are well-known to the child and family. Home visits are made on a regular and PRN basis by members of the pediatric oncology team and the local community health nurse. During these visits, any necessary medical procedures (physical examination, obtaining blood samples) can be done. Also, the home visits serve as both teaching experiences and positive reinforcement for the child's parents. Any necessary equipment (oxygen, drugs, suction equipment) can be brought into the child's home and the parents taught to use it. The parents are reassured that the child can be admitted to the hospital at any time they feel they cannot continue to handle the situation at home. Contact with the child's family continues after the death of the child. Members of the pediatric oncology team attend the child's funeral and generally keep in touch with the family via phone calls and letters.

The advantages in the child's death occurring at home are security and decreased fear for the dying child. The family can continue to live and function as a family, with all members taking part in caring for

the dying child. This is especially important for the child's siblings. The choice of dying at home is not necessarily the best option for all terminally ill children, and the decision to attempt it is made only after mutual exploration of the family's strengths, resources, and needs by members of the cancer care team. Some families are not capable — physically or emotionally — of meeting the demands of home care. For those who choose it, caring for the dying child at home is not only practical and possible, but beneficial for all members of the child's family.

Cancer Control Program

Advances in the treatment and care of cancer patients have occurred almost entirely at major medical centers. As these advances turn what was previously an acute illness into a chronic illness, this type of centralized care becomes a burden on the patient and family. The impact of such care is best seen in analyses of family finances. Financial stress is an important distress described by families, second in severity only to the diagnosis of cancer. This type of distress can easily reach what has been defined as a catastrophic level — approximately 15 per cent of gross income.¹⁴ A recent analysis of non-medical costs of pediatric cancer patients reveals that one half of the families spend an average of 25 per cent of their income on non-medical costs.¹⁵ These costs correlate with the level of care that the patient receives, the performance level of the patient, the distance of the patient from the medical center, and family size. A cancer control program aimed at increasing the level of care for the patient in the local community will reduce the distance the patient must travel for services. This program will alter two of the four major variables influencing non-medical costs.

The objective of the cancer control program is to increase cancer care in the community through aid to and education of health care providers. This program is being administered through the Southwest Oncology Group, and the UKSM program is one of 36 programs in 18 states. Clinical cooperative groups such as the Southwest Oncology Group are being used to institute cancer control programs, because their development of protocols in many cases represents the best in conventional evaluation, treatment, and care of cancer patients. In addition, the experience of the Southwest Oncology Group in record keeping and statistical analysis allows evaluation of the effectiveness of such cancer control programs as representing better care for more people.

Our cancer control program has tested our ability

to transfer care to the local community. The main participant in this pilot program has been David Rosen, M.D., in Wichita. The program will be extended to pediatricians in the state of Kansas, with the aid and assistance of the Kansas Chapter of the American Academy of Pediatrics. Practicing pediatricians were selected for their ability to present the largest number of patient referrals and because of their recent experience with developing regional care through involvement in the perinatal program. It is hoped that in the future non-pediatricians, who represent 47 per cent of patient referrals, may be included in this program.

This type of outreach program will interdigitate well with those programs already described as active in our section in involving community health nurses, school nurses, and school personnel in returning the patient to the community. It is desirable to increase the number of patients receiving up-to-date cancer care in the local community. This means transferring care to the local community and does not emphasize patient accrual. This plan is based on aid to and education of health care providers, and is seen as a reasonable and necessary approach for the best care for the largest number of cancer patients.

Summary

The challenges of childhood malignancies continue to be accurate diagnosis, complete staging, and early initiation of the most effective therapy. Recent advances in immunology and pathology have revealed subtypes of the common pediatric malignancies. Each subtype appears to have its own prognosis and requires specific therapy.

A cancer care team has been established at the University of Kansas Medical Center to care for the physical, emotional, social, and financial needs of these children and their families. Every attempt is made to enhance the quality of life of the child with cancer, and this requires continued education of the family, relatives, school teachers, school nurses, and the community health nurse. The community physician will now play a much larger role in the care of such children, for most will live years with their tumors and many will be cured. However, safeguards must be established to assure high quality of care. Complications of the disease or therapy (surgery, irradiation, or chemotherapy) must be recognized and treated early, for failure to do so often results in a fatality.

(Continued on page 140)

Pericarditis

An Initial Manifestation of Juvenile Rheumatoid Arthritis

CAROL B. LINDSLEY, M.D., and
LEONE MATTIOLI, M.D., *Kansas City, Kansas*

PERICARDITIS is a recognized nonarticular manifestation of juvenile rheumatoid arthritis (JRA). It has been shown to be clinically evident in approximately 7 per cent of all children with JRA¹ and is commonly associated with other systemic manifestations — high fever, evanescent rash, and hepatosplenomegaly. More recent studies utilizing echocardiography have shown a much higher incidence of 36 per cent for pericarditis in the overall JRA population.² The majority of these children are asymptomatic. This higher incidence of involvement more closely approximates the earlier autopsy studies showing that 45 per cent of cases of JRA demonstrated pericardial involvement.¹

Recently, three patients have been seen at UKSM-KC in whom pericarditis was either the sole or the dominant feature of their illness. These children demonstrated supporting clinical and laboratory evidence for the diagnosis of pericarditis (presence of pericardial fluid) as well as for juvenile rheumatoid arthritis (fever, chronic arthritis, and exclusion of other diseases).

Case Reports

Case One: Two months prior to admission, a 10-year-old white male developed an acute illness characterized by fever, sore throat, chest pain, evanescent rash, splenomegaly, pleural effusion, and an elevated erythrocyte sedimentation rate (ESR). He responded to corticosteroids, which were then tapered over the ensuing two months. Onset of pain in the right shoulder and a recurrence of chest pain of approximately 1½ weeks' duration led to hospitalization. Physical examination at that time revealed evidence of tachycardia, pericardial friction rub, and limitation of motion in the right shoulder. Chest x-ray revealed marked cardiomegaly and bilateral pleural effusions (*Figure 1*). The electrocardiogram (EKG) results were within normal limits, and the echocardiogram (ECHO) revealed a large pericardial effusion (*Figure 2*). Initial impression was that of

Pericarditis may be the initial and dominant presenting feature or it may concur with other systemic and articular aspects in patients with juvenile rheumatoid arthritis. The various manifestations in three children are discussed and treatments reviewed.

viral pericarditis, and the patient was treated with high dose salicylates with complete resolution of the pleuropericardial effusions in 2½ weeks (*Figure 3*). Viral cultures of throat and stool were negative as were all bacterial cultures. However, when the salicylates were inadvertently terminated approximately five weeks later, he developed a recurrence of severe chest, shoulder, and back pain. On the second admission, the EKG results were again within normal limits and the ECHO was positive for a pericardial effusion. ESR was elevated at 60 mm/hr. Because of the initial history of rash, fever, intermittent arthritis and recurrent pericarditis, the diagnosis of

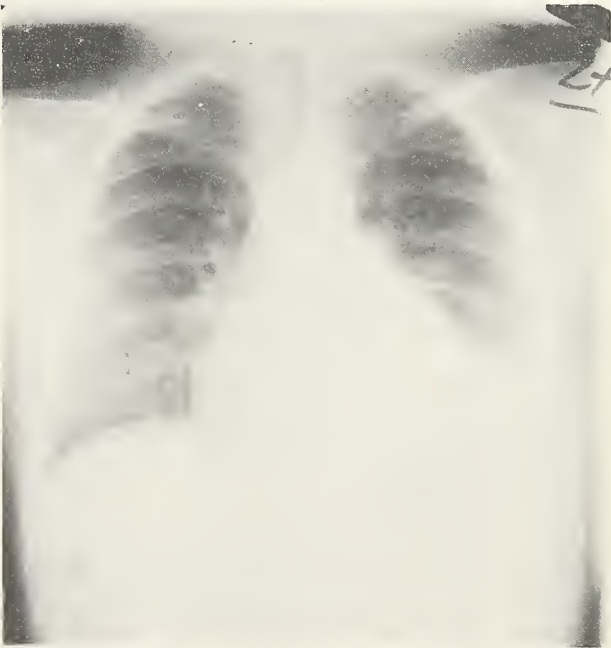


Figure 1. Chest roentgenogram in Case # 1 showing pericardial and bilateral pleural effusions.

From the Divisions of Rheumatology and Cardiology, Department of Pediatrics, University of Kansas School of Medicine, Kansas City, Kansas.

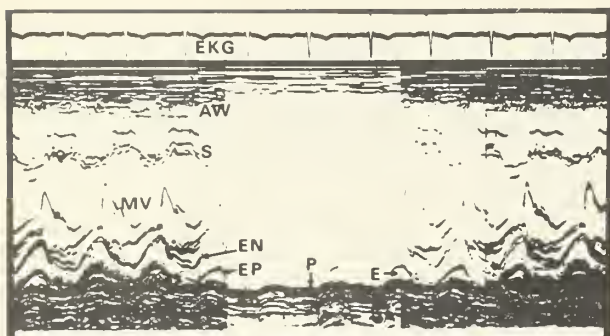


Figure 2. Echocardiogram showing pericardial effusion (E) in Case # 1.

systemic-onset JRA was considered. He was restarted on therapeutic dose of salicylates (90 mg/kg/24 hrs) with complete resolution of the pericarditis and joint symptoms. He was then asymptomatic for approximately eight months; however, when the salicylates were tapered, he developed a recurrence of shoulder and back pain, and for that reason he continues to be maintained on full dose salicylate.

Case Two: An 8-year-old white male presented to a local hospital with fever, chest pain, bilateral shoulder pain, and an elevated ESR of 44 mm/hr. He was later transferred to UKSM-KC for further evaluation and treatment. There was radiographic evidence of cardiomegaly. ECHO was positive for pericardial effusion, and EKG results were within normal limits. He was treated with salicylate therapy with good response, and when the salicylates were terminated six months later, he developed morning stiffness, a left-sided limp, and associated pain and swelling of the left knee. He responded to the reinstitution of salicylate therapy and has subsequently been asymptomatic.

Case Three: A 5-year-old white male presented with intermittent spiking fevers, evanescent rash in the right shoulder, and was first admitted to UKSM-KC with a diagnosis of fever of unknown origin (FUO). Extensive evaluation for infection yielded negative results, and approximately six weeks later, he developed tenosynovitis and polyarticular arthritis. He was treated with salicylate therapy (90 mg/kg/24 hrs) with good response, and did well for approximately six weeks. At that point, he experienced sudden severe chest pain, and ECHO revealed a large pericardial effusion. He exhibited clinical evidence of pericardial tamponade; pericardiocentesis was performed and approximately 100 ml of serosanguinous fluid was removed. Analysis of the pericardial fluid revealed elevated protein and white blood cell count. Systemic corticosteroids



Figure 3. Chest roentgenogram following 2½ wks of treatment with salicylates, showing resolution of pericardial and pleural effusions in Case # 1.

were then administered with further improvement over the next 2-3 days. The salicylates were restarted, the steroids tapered, and he has been asymptomatic on salicylate therapy for two years. Several attempts have been made to terminate the salicylates, at which time he has again developed polyarticular joint symptoms.

Discussion

Diagnosis. The above three children developed pericarditis as a dominant manifestation of JRA. In two of the children, the arthritis was a minor and intermittent problem, and other commonly associated systemic manifestations — *e.g.* rash, hepatosplenomegaly — were absent at the time the pericarditis occurred. In previous studies, pericarditis in JRA has not shown a significant correlation with sex or age of disease onset.¹ Correlations were found with systemic-onset disease, as opposed to polyarticular-onset or pauciarticular-onset disease.² The type of disease onset is defined by the presence or absence of fever and the number of joints involved during the first six months of disease. By definition, in systemic-onset JRA, fever is present and there is usually a rash.³

Supporting laboratory evidence for the diagnosis of this subtype of JRA include leukocytosis, anemia, and markedly elevated ESR. The differential diagnosis includes rheumatic fever, viral pericarditis,

septic pericarditis, and other collagen-vascular disease. None of these children had evidence of recent streptococcal infection by culture or antistreptococcal antibody titers, nor was there evidence of endocarditis or valvular disease. In addition, the P-R interval on the EKG remained entirely within normal limits. All cultures and gram stains were negative. Systemic lupus erythematosus was ruled out by the negative antinuclear antibody test and absence of other clinical criteria.⁴

Viral pericarditis is usually a self-limiting disease with a low incidence of recurrence.⁵ It is known to be commonly associated with coxsackie B virus infections as well as adenovirus, Epstein-Barr virus, ECHO virus, measles, and influenza infections. Typically, acute pericarditis from viral causes is associated with other evidence of viral disease, particularly flu-like symptoms and a viral exanthem. Long-term follow-up studies raise the question as to whether residual cardiac abnormalities exist even though the patients are asymptomatic.⁶ Direct viral isolation from throat, stool or pericardial fluid, or serologic confirmation of the infection with a four-fold rise in serologic titer is considered definitive for the diagnosis of viral pericarditis. None of these children had confirmatory evidence of viral infections.

The electrocardiographic changes are nonspecific in the pericarditis of JRA. ST and T-wave abnormalities may be present, but in as many as 50 per cent of these patients the EKG results are within normal limits.² Bernstein *et al.* found that 11 of 20 patients had only echocardiographic abnormalities that enabled the diagnosis of pericarditis to be made — *i.e.* they had neither EKG abnormalities nor chest radiographic evidence of cardiomegaly.² The echocardiogram is generally considered diagnostic of pericardial effusion when there is a minimum of 4 mm separation between echoes from the epicardium and pericardium. It is often difficult to rule out myocardial involvement. Although myocarditis is extremely rare in juvenile rheumatoid arthritis, it should be considered when there is evidence of cardiomegaly without an accompanying effusion or evidence of congestive heart failure in a child with known JRA. Bernstein *et al.*² showed that 4 of 40 patients had echocardiographic evidence of decreased ventricular performance and possible myocardial involvement.

Treatment. The majority of patients with pericarditis as a manifestation of juvenile rheumatoid arthritis is not severely symptomatic and responds to the basic treatment for underlying disease; *i.e.*, salicylate dosage yielding serum levels 20-30 mg/dl.

However, those patients who present with large effusions may obtain acute and dramatic relief from moderate doses of corticosteroids. These should be used in high doses only for a short period of time and then tapered over the ensuing 6-8 wks. Long-term corticosteroid therapy is not indicated. If evidence of cardiac tamponade occurs, then pericardiocentesis is indicated. There is one report of local injection of corticosteroid into the pericardial space following pericardiocentesis. Digitalis plays no role in the treatment of pericarditis in JRA. These patients appear to be very sensitive to the drug, and they may develop toxicity on very low dosages.

There are relatively few available studies on pericardial fluid of these patients, but those reported show a low glucose and low total hemolytic complement.⁷ Ball *et al.* reported gammaglobulin complexes within the pericardial fluid of an adult rheumatoid patient.⁸

Summary

Described were two children with acute pericarditis as an initial and dominant manifestation of juvenile rheumatoid arthritis; in a third, the other common manifestations of systemic-onset JRA accompanied the pericarditis. Pericarditis may be the presenting feature of JRA and may precede other systemic and articular aspects of the disease. Steroids in moderate dosage bring about striking clinical improvement in the severely symptomatic JRA patient with pericarditis, while salicylates are adequate for milder involvement and on a long-term basis.

References

1. Lietman, P. S. and Bywaters, E. G. L.: Pericarditis in juvenile rheumatoid arthritis. *Pediatrics* 32:855-860, 1963.
2. Bernstein, B.; Takahashi, M. and Hanson, V.: Cardiac involvement in juvenile rheumatoid arthritis. *J. Pediatr.* 85:313-317, 1974.
3. JRA Criteria Subcommittee: Current proposed revision of JRA criteria. *Arthritis Rheum.* 20 (Suppl):195-199, 1977.
4. Systemic Lupus Erythematosus Criteria Subcommittee of the American Rheumatism Association Section of the Arthritis Foundation: Preliminary criteria for the classification of systemic lupus erythematosus. *Bull. Rheum. Dis.* 21:643-648, 1973.
5. Carmichael, D. B.; Sprague, H.; Wyman, D. and Blana, E. F.: Acute nonspecific pericarditis: Clinical laboratory, and follow-up considerations. *Circulation* 3:21, 1951.
6. Levi, G. F.; Proto, C.; Quadri, A. and Ratti, S.: Coxsackie virus heart disease and cardiomyopathy. *Am. Heart J.* 93:419-421, 1977.
7. Scharf, J.; Levy, J.; Benderly, A. and Nohir, M.: Pericardial tamponade in juvenile rheumatoid arthritis. *Arthritis Rheum.* 19:760-762, 1976.
8. Ball, B. V.; Schoenloher, R. and Hester, R.: Gamma-globulin complexes in rheumatoid pericardial fluid. *Am. J. Med.* 58:123-128, 1975.

Renal Transplantation

A Decade of Experience

**JAMES H. THOMAS, M.D.; GEORGE E. PIERCE, M.D.;
JUDITH GREATHOUSE, R.N.; ARLO S. HERMRECK, M.D.;
DENNIS A. DIEDERICH, M.D.; JARED J. GRANTHAM, M.D.;
ARNOLD M. CHONKO, M.D.; VIRGINIA J. SAVIN, M.D.;
WINSTON K. MEBUST, M.D. and DONALD E. CROSS, M.D., Kansas City, Kansas**

RENAL TRANSPLANTATION was first demonstrated to be life sustaining in 1953 by Hume, Merrill, Miller, and Thorn.¹ By 1965, as a result of important contributions by Murray,^{2,3} Calne,⁴ Hume⁵ and Starzl,⁶ satisfactory control of allograft rejection was achieved, and renal transplantation became clinically feasible. Renal allotransplantation is now an established method for managing patients with end stage renal disease.

Patients and Methods

The results of renal allotransplantation at the University of Kansas Medical Center between July 1969 and October 1978 have been reviewed. The patients have been analyzed in terms of morbidity and mortality rates, duration and quality of graft function, mechanisms of graft loss and homologous leucocytic antibodies (HLA) antigen matching. Kidney and recipient cumulative survival curves were constructed using the life table method described by Cutler and Ederer.⁷ Patients who received more than one transplant were listed as new patients at the time of the subsequent transplant.

All recipients were evaluated preoperatively by a thorough history and physical examination, chest roentgenograms, pulmonary and liver function tests, EKG, serum electrolytes, skin tests for common recall antigens, urinalysis, urine cultures, and cystoscopic and cystometric examinations. Neither diabetes nor a past history of cancer were considered contraindications to renal transplantation. Final decisions regarding acceptance for transplantation were made by the transplantation committee composed of staff nephrologists, urologists, and transplant surgeons.

From the Department of Surgery and the Department of Medicine, University of Kansas School of Medicine, Kansas City, Kansas, and the Midwest Organ Bank, Kansas City, Missouri.

Address reprint requests to Dr. Thomas, Department of Surgery, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

Prospective recipients were typed for HLA-A and HLA-B histocompatibility antigens. One-way mixed leukocyte cultures were tested with lymphocytes from patients and potential living related donors. With eleven exceptions, cadaveric kidneys

Renal allotransplantation at the University of Kansas Medical Center is entering its tenth year. To date, 137 transplants have been performed. The patient and graft survival rates are higher than those reported by the last Human Renal Transplant Registry, and compare favorably with those reported by other transplant centers. At the University of Kansas Medical Center, the cumulative five-year patient survival rate is 83 per cent, and the cumulative graft function rate is 61 per cent. Renal allotransplantation remains a highly effective method for treating patients with end stage renal disease.

were accepted for grafting only when the donor and recipient shared at least two of four HLA antigens. With one exception, only non-stimulating or poorly stimulating lymphocyte donors were selected as related kidney donors.

Standard operative techniques were utilized for renal transplantation. In small children, a midline abdominal transperitoneal incision was often used and the graft vessels were anastomosed to the aorta and vena cava. In large children and adults, the grafts were placed in the retroperitoneal space and the renal vessels anastomosed end-to-side to the common, external or internal iliac artery, and to the common or external iliac vein. Ureteroneocystostomy was the only method used to establish urinary drainage. Immunosuppression was achieved initially with a single 20-30 mg/kg intravenous dose of methylprednisolone and 2-3 mg/kg daily doses of cyclophosphamide for six days. Immunosuppression was

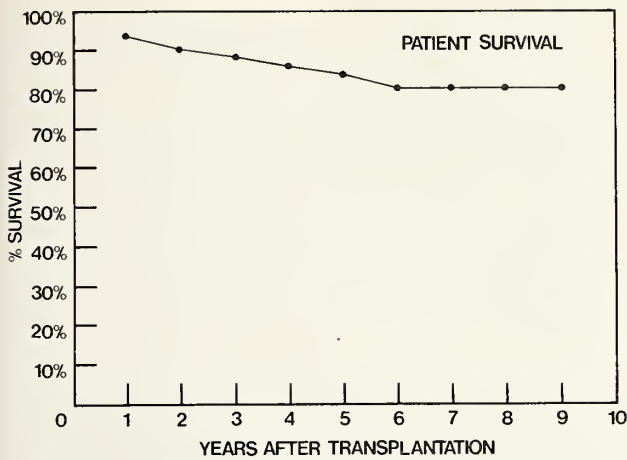


Figure 1. Cumulative survival of 137 consecutive renal allograft recipients. One-hundred-seven cadaver and 30 living related donors.

maintained by 2-3 mg/kg daily doses of azathioprine and 40-60 mg doses of oral prednisone tapered over one-two months to 5-10 mg doses. Rejection episodes were treated with intravenous methylprednisolone in 20-30 mg/kg doses. Anti-lymphocytic globulin was not used.

Results

During the nine-year period from July 1969 to November 1978, 121 patients received 137 kidney transplants; 59 recipients were male and 78 female. Thirty living related and 107 cadaveric donor transplants were performed. Sixteen patients had second transplants, all of which were cadaveric. Of the 30 living related donors, 22 were siblings, six were parents and two were children of the recipients.

Patient Survival

The cumulative mortality was 11 per cent. Fourteen recipients (13%) of cadaveric kidneys and two recipients (6%) of kidneys from living related donors died. Ten deaths occurred in the early postoperative period (<6 mos) and six deaths occurred after six months. Of the early postoperative deaths, four were related to pneumonia; sepsis, 3; pancreatitis, 1; cerebral aspergillosis, 1; and hypertension, 1. The six late deaths occurred after 24 months and resulted from myocardial infarction, pancreatitis, cerebrovascular accident, and sepsis. One patient died of hemorrhage during home dialysis. Two of the early postoperative deaths in 1975 were attributed to Legionnaires' disease. No early postoperative deaths have occurred during the last three years.

Patient survival data are summarized in Figure 1. Recipient survival is 90 per cent at two years, 83 per cent at five years, and 79 per cent thereafter. These

TABLE I
CAUSES OF ALLOGRAFT FAILURE IN
137 RENAL TRANSPLANTS

Rejection	39
Renal vein thrombosis	1
Wound infection	1
Oxalosis	1
Perinephric hematoma	1
Ureteral obstruction	1
Pneumonia	1
Total	45

results compare favorably with those in the report of the 12th Transplant Registry,⁸ in which 51-71 per cent of patients survived for five years. Also, our results are comparable to those reported from other transplant centers such as the Peter Bent Brigham Hospital⁹ and the University of Minnesota Hospital,¹⁰ with 50-70 per cent and 70 per cent five-year patient survivals respectively.

Kidney Survival

Sixty-nine (64%) of the 107 cadaveric grafts and 23 (77%) of the 30 grafts from living related donors are functioning (serum creatinine <2.5 mg%). Nineteen (86%) of the sibling donor grafts, two (33%) of the parent donor grafts, two (100%) of the offspring donor grafts, and eight (50%) of the 16 second grafts are functioning.

The causes of graft failure are presented in Table I. Most of the grafts that failed ceased to function within the first six months after transplantation. The most common cause for graft loss was rejection (87%). Only one kidney was lost to hyperacute rejection and this occurred early in the series. Life

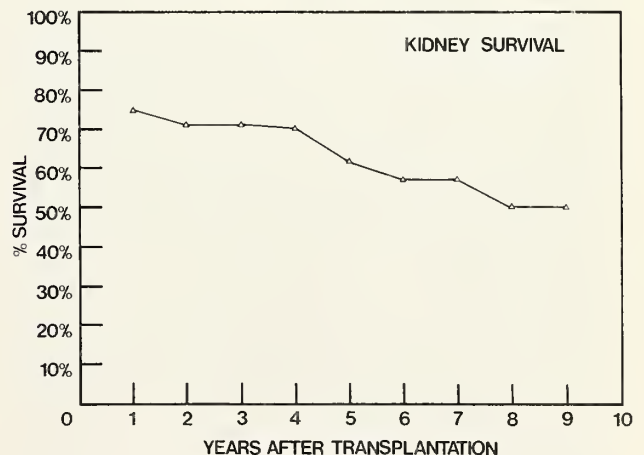


Figure 2. Cumulative kidney function of 137 consecutive renal allografts from living related and cadaveric donors.

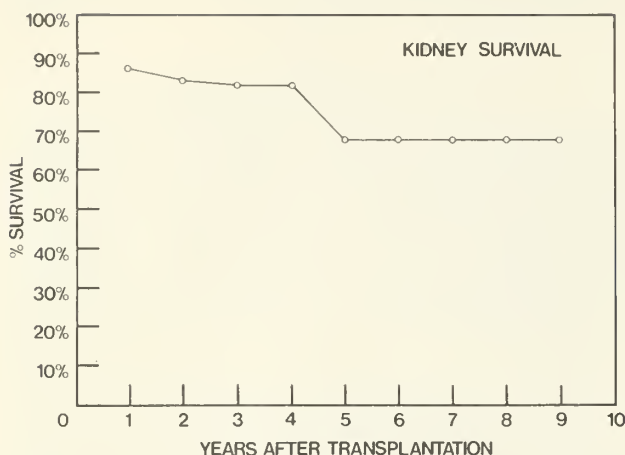


Figure 3. Cumulative kidney function of 30 consecutive renal allografts from living related donors.

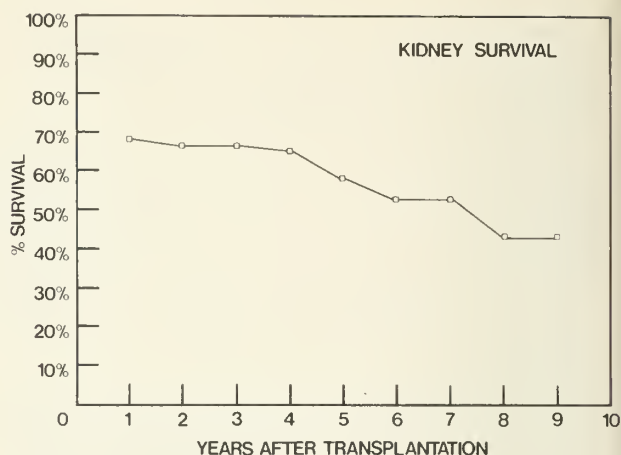


Figure 4. Cumulative kidney function of 107 consecutive renal allografts from cadaveric donors.

tables which summarize kidney function are presented in *Figures 2-4*.

The fractions of kidneys from living related donors still functioning at two years (81%), five years (68%), and nine years (68%) compare favorably with results from other centers. Graft survival rates of 70 and 75 per cent at two years, 52 and 58 per cent at five years, and 50 per cent at ten years have been reported from the Peter Bent Brigham Hospital⁹ and the 12th Transplant Registry⁸ respectively. Likewise, for grafts from cadaveric donors, the cumulative survival rates at two years (67%), five years (58%), and nine years (43%) compare favorably with the 38-65 per cent two-year, 24-43 percent five-year, and 20-43 per cent ten-year rates from other centers.⁸⁻¹⁰

HLA Histocompatibility

The matching status for 133 of the 137 transplants was analyzed. Information was available from 103 cadavers and 30 living related transplants. Sixty-nine (51%) of 133 recipients shared three or four antigens with the donor. Fifty-three (75%) of the grafts in these patients are functioning. In contrast, in the 64 recipients who shared 2.5 antigens or less with the donor, 34 (53%) of the kidneys are functioning. In recipients of cadaver grafts, 34 of 46 kidneys (74%) are functioning in recipients who shared three-four HLA antigens with the donor compared to 30 of 57 allografts (58%) with HLA matches of 2.5 antigens or less.

Complications

Table II lists the nonfatal complications encountered in the 137 transplantation procedures. Ureteral

complications frequently led to graft loss, but no graft was lost simply because of a urine leak. Only one patient developed a peptic ulcer; this was complicated by bleeding and did not require operation. It has been our practice to perform vagotomy and pyloroplasty in any potential recipient with a history of peptic ulcer disease prior to transplantation. The one patient with perforation of a colonic diverticulum was successfully managed by early operative intervention and exteriorization of the diseased segment. None of the living-related donors developed complications that prolonged hospitalization.

Discussion

Dialysis and renal transplantation are the only methods available for treating patients with end stage renal disease. The survival curve for patients treated by chronic dialysis lies below the curve for recipients

TABLE II
NONFATAL COMPLICATIONS IN
137 RENAL TRANSPLANTS

Pneumonia	1
Lymphoceles	2
Wound infections	3
Renal vein thrombosis	2
Perforated colonic diverticulum	1
Ureteral obstructions	2
Perinephric hematoma	1
Urine leaks	3
Fungal infection	1
Duodenal ulcer with hemorrhage	1
Cytomegalovirus infection	1
Total	17

of kidneys from living-related donors, but is higher than that for recipients of cadaveric grafts. The survival curve for the 137 recipients of kidneys from living-related and cadaveric donors in this series is higher than the survival curve for dialysis. Furthermore, it is generally agreed that the quality of life is improved by successful renal transplantation. That recipients of renal allografts may live a nearly normal life is demonstrated by three normal pregnancies and full-term deliveries in three of the renal allograft recipients in the Kansas series.

The higher patient and kidney survival rates for the Kansas University recipients when compared with those reported by the 12th Transplant Registry and some other transplant centers may relate to the relatively large number of transplants with three or four HLA antigen matches at the Kansas University Medical Center. The relationship between HLA matching and patient and graft survival rates remains controversial but several other centers have presented data that suggest a positive correlation.^{11, 12} Najarian *et al.*¹⁰ suggest these results may be further improved by the use of antilymphoblastic globulin (ALG) in the immunosuppression regimen. ALG was not used in the Kansas University Medical Center patients; however, the kidney survival curve was comparable to that reported by Najarian.

The experience at the Kansas University Medical Center suggests that renal transplantation is an attractive alternative to chronic dialysis for young, active patients who are willing to accept the acute risks of transplantation in return for freedom from the routines of dialysis and for the opportunity to achieve a sense of good health and well-being not offered by chronic dialysis.

References

1. Hume, D. M.; Merrill, J. P.; Miller, B. F. and Thorn, G. W.: Experience with renal transplantation in the human: Report of nine cases. *J. Clin. Invest.* 34:327, 1955.
2. Murray, J. E. *et al.*: Kidney transplantation in modified recipients. *Ann. Surg.* 156:337, 1962.
3. Murray, J. E. *et al.*: Prolonged survival of human kidney homografts by immunosuppressive drug therapy. *N. Engl. J. Med.* 268:1315, 1963.
4. Calne, R. Y.: The rejection of renal homograft: Inhibition in dogs by 6-mercaptopurine. *Lancet* 1:417, 1960.
5. Hume, D. M. *et al.*: Renal homotransplantation in man in modified recipient. *Ann. Surg.* 158:608, 1963.
6. Starzl, T. E.; Marchioro, T. L. and Waddell, W. R.: The reversal of rejection in human renal homograft with subsequent development of homograft tolerance. *Surg. Gynecol. Obstet.* 117:385, 1963.
7. Cutler, S. J. and Ederer, F.: Maximum utilization of the life table method in analyzing survival. *J. Chronic Dis.* 8:699, 1958.
8. *The 12th Report of the Human Renal Transplant Registry: Advisory Committee to the Renal Transplant Registry.* JAMA 233:787, 1975.

9. Murray, J. E.; Tilney, N. L. and Wilson, R. E.: Renal transplantation: A twenty-five year experience. *Ann. Surg.* 184:565, 1976.

10. Najarian, J. S. *et al.*: Seven years' experience with antilymphoblastic globulin for renal transplantation from cadaveric donors. *Ann. Surg.* 184:352, 1976.

11. Callender, C. O. *et al.*: Anti-HLA antibodies: Failure to correlate with renal allograft rejection. *Surgery* 76:573, 1974.

12. Olivor, R. T. D. *et al.*: Influence of HLA matching antigenic strength and immune responsiveness on outcome of 349 cadaver renal grafts: 3 years' experience of the London transplant group. *Lancet* 2:1381, 1972.

Obstetrical Genetics

(Continued from page 112)

Reading List

The following reading list is designed to provide general background information for practicing physicians. It provides a starting point for readings in human genetics. Frequently used references for the clinical genetist are also included. Titles marked with an asterisk are particularly important introductory texts. A specific reference list for this article is available from the author upon request.

Bergsma, D.: *Birth Defects Atlas and Compendium.* Williams & Wilkins, 1973.

Borgaonkar, D. S.: *Chromosomal Variation in Man.* Ed. 2, Liss, 1978.

Emery, A. E. H.: *Antenatal Diagnosis of Genetic Disease.* Williams & Wilkins, 1973.

Goodman, R. M., and Gorlin, R. J.: *Atlas of the Face in Genetic Disorders.* Mosby, 1977.

Gorlin, R. J., Pindborg, J. J., and Cohen, M. M.: *Syndromes of the Head and Neck.* Ed. 2, McGraw-Hill, 1976.

* Harris, H.: *The Principles of Human Biochemical Genetics.* Ed. 2, North Holland, 1975.

Kelly, S., Hook, E. B., Jonerich, D. T., and Porter, I. H.: *Birth Defects: Risks and Consequences.* Academic, 1976.

Littlefield, J. W., and DeGrouchy, J.: *Birth Defects.* Excerpta Medica, 1978.

McKusick, V. A.: *Mendelian Inheritance in Man.* Ed. 5, Johns Hopkins, 1978.

* Milunsky, A.: *The Prenatal Diagnosis of Hereditary Disorders.* Thomas, 1973.

Murphy, E. A., and Chase, G. A.: *Principles of Genetic Counseling.* Year Book, 1975.

* Riccardi, V. M.: *Genetic Approach to Human Disease.* Oxford, 1977.

* Smith, D. W.: *Recognizable Patterns of Human Malformations.* Ed. 2, Saunders, 1976.

Sparkes, R. S., Comings, D. E., and Fox, C. F.: *Molecular Human Cytogenetics.* Academic, 1977.

Stanbury, J. B., Wyngaarden, J. B., and Fredrickson, D. S.: *Metabolic Basis of Inherited Disease.* Ed. 4, McGraw-Hill, 1978.

Stern, C.: *Principles of Human Genetics.* Ed. 3, Freeman, 1973.

* Stevenson, A. C., Davison, B. C. C., and Oakes, M. W.: *Genetic Counseling.* Ed. 2, Lippincott, 1976.

* Warkany, J.: *Congenital Malformations.* Year Book, 1971.

Wilson, J. and Fraser, F. C.: *Hand Book of Teratology.* Plenum, 1977.

Yunis, J. J.: *Molecular Structure of Human Chromosomes.* Academic, 1977.

Yunis, J. J.: *New Chromosomal Syndromes.* Academic, 1977.

Cardiorespiratory Syndrome

Manifestations in Children With Chronic Upper Airway Obstruction

KENNETH K. GOERTZ, M.D. and
LEONE MATTIOLI, M.D., *Kansas City, Kansas*

CHRONIC TONSILLAR and adenoid hypertrophy often precipitate upper airway obstruction of varying degrees, particularly in young children between the ages of two and six years. These children are often small, pale, somnolent, and characteristically exhibit noisy breathing accentuated by sleep and neck flexion. Occasionally, when airway obstruction becomes severe, pulmonary edema develops accompanied by cardiac enlargement and clinical signs of right ventricular failure. Since 1965, several reports have appeared in the literature describing these cardiopulmonary complications of chronic pharyngeal lymphoid hypertrophy.¹⁻⁶ Tonsilloadenoidectomy invariably brings about a remarkable clinical improvement and normalization of cardiorespiratory function. It is, therefore, important to recognize the existence of this entity. Despite the appearance of this syndrome in both pediatric and ENT literature, and the characteristic findings, the diagnosis is frequently delayed. The importance of recognizing this syndrome is emphasized by this presentation of two children with pulmonary edema, cardiac enlargement, and clinical signs of congestive failure due to chronic, severe, upper airway obstruction. In both children, all cardiorespiratory symptoms disappeared after tonsilloadenoidectomy. A brief description of the syndrome is presented in light of the current views of its pathogenesis.

Case Reports

Case One: A 2½-year-old white male was admitted to the University of Kansas Medical Center with a one-week history of fever, noisy breathing, and increasing stridor. The initial chest x-ray demonstrated pulmonary infiltrates interpreted as bronchopneumonia. Because of cyanosis, edema and liver enlargement, the child was given one dose of Lasix with a resulting two-pound weight loss and an improvement in symptoms.

The infant was a product of a premature birth, weighing four pounds. In the perinatal period, the

infant developed transient tachypnea for which he received oxygen for three days. At the age of eight months, he began a series of six hospitalizations with the diagnosis of acute laryngotracheal bronchitis.

Cases of two young children demonstrate the effectiveness of tonsilloadenoidectomy in treating cardiorespiratory complications of chronic upper airway obstruction.

The majority of these episodes were associated with right-upper lobe infiltrates, and the infant responded on those occasions to treatment with oral antibiotics and a croup tent. Because of recurrent problems, the child was assessed for allergies; immunoglobulins were found to be normal. The results of a sweat test were also negative. Growth and development were normal with parameters following the 50th percentile. The parents reported that the child was always in good health except for noisy breathing manifest from nine months of age.

On admission to the Medical Center, the child was mildly cyanotic and in no acute distress with respiratory rate of 25/min. There were marked intercostal and suprasternal retractions, and both inspiratory and expiratory stridor. Pulse rate was 140 beats/min. The tonsils were enlarged and covered with exudate but were not meeting in the midline. Bilateral ronchi and rales in the chest were audible. The cardiovascular examination revealed normal first heart sounds, no murmurs, and slightly accentuated pulmonary component of the second heart sound. The liver was not palpable; extremities were edematous. The laboratory data showed hemoglobin, 14.7 gm/ml; hematocrit, 46%; white blood cell count (WBC), 22,000/cu mm, with a differential of 45 segs, 4 bands, 39 lymphocytes, and 10 monocytes. The chest roentgenogram on admission showed bilateral pulmonary infiltrates, probably caused by pulmonary edema (*Figure 1A*). The electrocardiogram showed mild right axis deviation, right atrial enlargement, and mild right ventricular hypertrophy. The arterial blood gases in room air showed pH, 7.32; pO₂, 44; and PCO₂, 64. Thus, there was

From the Department of Pediatrics, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Mattioli, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

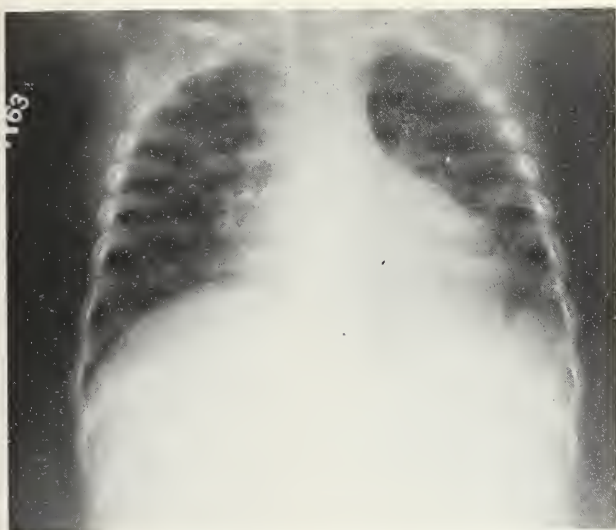


Figure 1A. Preoperative chest X-ray (case #1) shows cardiomegaly and bilateral infiltrates.

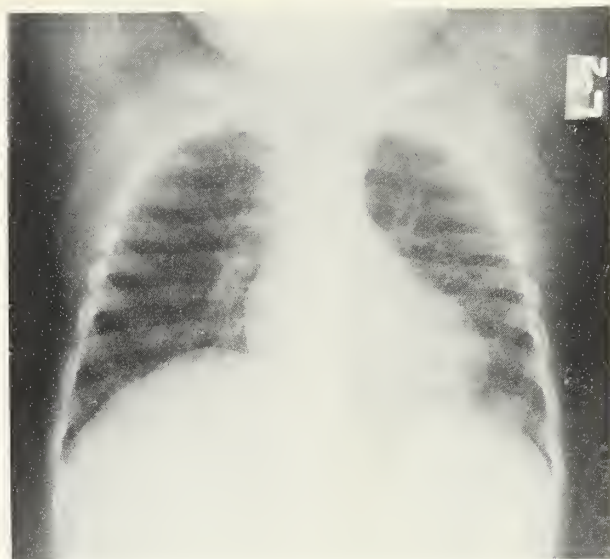


Figure 1B. Postoperative chest X-ray (case #1) shows reduction in the heart size and clearing of the pulmonary edema.

evidence of hypoxemia and hypoventilation with CO_2 retention. Tonsilloadenoidectomy was performed and gradually all signs of upper airway obstruction disappeared with normalization of arterial blood gases. The chest x-ray showed gradual improvement of pulmonary edema and return of the heart to normal size (Figure 1B). Subsequent laboratory tests resulted in normal findings for sweat test, barium swallow, alpha-1-antitrypsin, and immunoglobulins.

Case Two: A 2½-year-old white male child with Down's syndrome was admitted to the University of Kansas Medical Center because of nocturnal episodes of respiratory distress. These consisted of tachypnea with respiratory rates to 45/min as counted by his mother, increased respiratory effort, stridor, and apparent cyanosis. His mother related that the patient was usually found asleep sitting upright in bed grabbing a siderail, and appeared less distressed in this position than when supine. First observation of this respiratory difficulty occurred 1½ months prior to admission at the Medical Center. Two weeks later he was hospitalized for dehydration at another hospital. No history of vomiting, diarrhea, or fever existed. Within 24 hours prior to admission at UKSM, he experienced three episodes of respiratory distress.

Past medical history included a prolonged neonatal hospitalization for low birth weight (3 lbs 11 oz), respiratory distress, and jaundice. The diagnosis of Down's syndrome was confirmed at four months of age. He had been hospitalized here once pre-

viously at one year of age for poorly resolving pneumonia. An evaluation for immune deficiency and granulocyte function produced normal results. Utilization of chest physiotherapy alone, without antibiotics, produced substantial clinical improvement, and the patient was discharged after a one-week hospitalization.

On his second admission here, he weighed 8.4 kg and was 75.5 cm tall (both less than 3rd percentile). Respiratory rate was 32/min; pulse rate, 100/min; blood pressure, 90/70 mm Hg. He had the typical features of a child with Down's syndrome. Other significant physical findings included tonsils grossly enlarged meeting in the midline; lungs clear to auscultation; and mild pectus excavatum chest deformity. Examination of the cardiovascular system revealed a Grade II/VI pulmonic flow murmur without ejection click, and increased intensity of the pulmonic component of the second heart sound. No organomegaly was detected on examination of the abdomen. The initial chest x-ray (Figure 2A) showed perihilar infiltrates and an enlarged heart. The infiltrates were initially interpreted as viral pneumonitis. Initial ECG (Figure 3A) showed right axis deviation and right atrial and right ventricular hypertrophy.

Shortly following admission, an episode was observed in which, with the patient's head flexed, no air exchange could be detected, and intercostal and supraclavicular retractions were prominent. He was cyanotic. Spontaneously, he hyperextended his neck and effective respirations commenced. Later tests



Figure 2A. Preoperative chest X-ray (case #2) demonstrates cardiac enlargement and diffuse interstitial infiltrates (pulmonary edema).



Figure 2B. Postoperative chest X-ray after five months (case #2) demonstrates normal cardiac size, no pulmonary edema, and residual RUL infiltrate.

for arterial blood gases were performed with the patient's head spontaneously flexed for 10 minutes and again after 10 minutes of mild hyperextension, with results of pH, 7.41; PaO₂, 49 mm Hg; PaCO₂, 54 mm Hg; and pH, 7.41; PaO₂, 67 mm Hg; PaCO₂, 46 mm Hg respectively. Thus, there was a significant rise in PaO₂ and fall in PaCO₂ with hyperextension, indicating relief of a significant upper airway obstruction. Pediatric cardiology and ENT consultations were obtained, and following a night spent in the pediatric ICU with nasopharyngeal airway tubes, his tonsils and adenoids were removed. The adenoids produced an estimated 70 per cent obstruction of nasopharynx; tonsils were 3+ enlarged. Postoperatively, he developed right-upper lobe atelectasis which cleared substantially with chest physiotherapy and ampicillin by discharge eight days following admission.

Five months after discharge, he had experienced no further episodes of respiratory distress, and the results of a physical examination were normal except for the features of Down's syndrome and pectus excavatum. Chest x-ray showed a normal heart size and no pulmonary edema (Figure 2B); electrocardiogram was also normal (Figure 3B).

Discussion

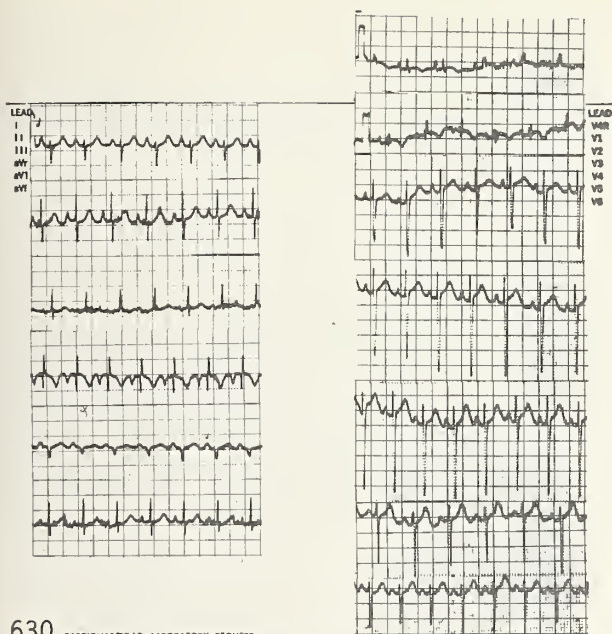
The above cases dramatically illustrate the clinical course of severe upper airway obstruction and its

cardiorespiratory complications. On the basis of current knowledge, the following sequence of events may be postulated to account for the entire syndrome. Severe upper airway obstruction leads to both alveolar hypoventilation and pulmonary edema. These in turn cause pulmonary vasoconstriction, pulmonary artery hypertension, and increased right ventricular work. Concomitantly, there is blood volume expansion with sodium retention, cardiac enlargement, and signs of peripheral congestion.⁷

Pulmonary edema is primarily interstitial in nature and is believed to be due to increased fluid production resulting from abnormal respiratory mechanics. During the marked inspiratory effort simulating the Muller maneuver (forceful inspiration against a closed glottis), enhanced negative pleural pressure is transmitted to the pulmonary interstitium. This negative hydrostatic force augments filtration from the lung capillaries to the pulmonary interstitium leading to edema formation.⁸ Vasoconstriction produced by pulmonary edema is accentuated and sustained by hypoxemia, CO₂ retention, and acidosis caused by hypoventilation.

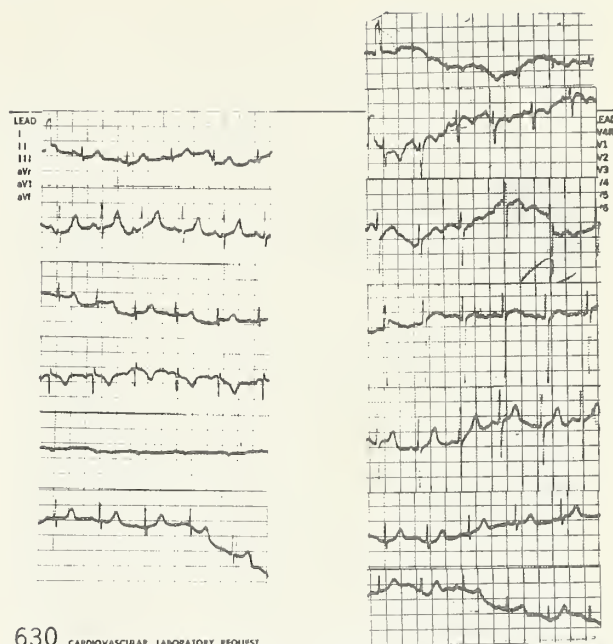
The essential features of the syndrome under discussion can be summarized as follows:

1. *Signs of upper respiratory obstruction.* It is important to recognize that stridor — both inspiratory and expiratory — is an essential feature of the syndrome. Stridor and chest retractions are quite



630 CARDIOVASCULAR LABORATORY REQUEST

Figure 3A. Preoperative electrocardiogram (case #2) shows right ventricular hypertrophy, right atrial hypertrophy, and right axis deviation.



630 CARDIOVASCULAR LABORATORY REQUEST

Figure 3B. Postoperative electrocardiogram (case #2) is normal after five months.

obvious when the neck is flexed. During sleep, the airway obstruction becomes more severe with episodes of complete epiglottic closure. During these episodes, the child becomes quite restless, awakes with sudden fright, and cries loudly. Oxygen tension — quite depressed when the child is sleeping with neck flexed — improves significantly upon extension of the neck or lifting of the mandible, or upon establishing an airway by intubation.

2. *Signs of pulmonary congestion.* The symptoms and signs are somewhat misleading and may be misinterpreted as pneumonia. The child presents with fever, cough and rales, bilaterally. Radiographically, the picture is often indistinguishable from that of viral pneumonia. In the two cases presented, the diagnosis of viral pneumonia was also made. It is important, in this regard, to recognize that the type of breathing is different in children who have pneumonia. With pneumonia, grunting and shallow respirations are present, whereas with upper airway obstruction, the most significant features are intercostal and suprasternal retractions with stridor.

3. *Signs of systemic congestion* (often referred to as right ventricular failure). These include hepatomegaly, neck vein distention, weight gain, and peripheral edema. The association of pulmonary edema, cardiomegaly, and liver enlargement has led

to the speculation that left and right ventricular failure exist in these conditions. Some authors have found elevated left ventricular end diastolic pressure.^{9, 10} However, satisfactory documentation of decreased cardiac performance in these cases has not been revealed in the literature. The clinical features resemble the high output state as seen in severe anemia. Also a feature of the syndrome is *pulsus paradoxus*, i.e., inspiratory fall in systemic pressure related to the marked swings in intrathoracic pressure that affects left ventricular stroke volume. It is important to recognize that often the syndrome described is intermittent, probably related to acute episodes of obstruction with infection or allergy. In the presence of small nasal passages and a large tongue (as in Down's or Pierre-Robin syndromes), or a small mandible, even moderately enlarged tonsils could critically reduce the airflow and cause airway obstruction.¹¹ Medical treatment for this syndrome should include Lasix intravenously and establishment of an airway as quickly as possible. Use of digitalis remains controversial. Because tonsillectomy removes the cause of the obstruction, it should be performed promptly; it is considered the definitive treatment for this syndrome.

(Continued on page 137)

Strategy

Improving Adherence to Medication Regimens

KATHLEEN A. O'CONNELL, R.N., Ph.D.* and
NORMAN G. MARVIN, M.D.,† *Kansas City*

PUBLISHED RESEARCH has shown that between 18 and 92 per cent of all patients do not adhere to prescribed medication regimens.¹ This paper suggests ways to improve patients' adherence to the medication regimens prescribed. Suggestions are based on experience in studying compliance with long-term regimens and on other published findings.

This study was conducted with 102 outpatients in three different patient care settings. Thirty-eight patients were attending the Family Practice Clinic of the University of Kansas Medical Center in Kansas City; 38 patients were from the private practice of four internists in a middle-sized midwestern city; and 26 patients were attending the Diabetic Clinic of the University of Kansas Medical Center. The study had two components. One component involved patients' responses to hypothetical treatment situations; the second involved patients' actual compliance with their own regimens.

Patients in the study were presented with 18 hypothetical situations and asked how likely they would be to comply with a standard medication regimen if each situation were true for them. The situations differed along three dimensions: the severity of the conditions, the discomfort of the conditions, and the subjective effects of the regimens (*i.e.*, whether the regimen made the patient feel better, worse, or no different).

For the second component of the study, patients were interviewed about actual compliance with their own regimens. Patients were also asked about the severity and discomfort of their conditions and the effects of their regimens.

Seventy-five per cent of patients in our study admitted missing doses of medications at least once; 40

per cent admitted they took fewer than 95 per cent of their prescribed doses in the previous month; 12 per cent admitted they took fewer than 75 per cent of their prescribed doses in the previous month. There were no differences in the compliance rates among the three medical care settings.

This research project was designed to determine strategies for improving patient adherence to medication regimens. Four types of strategies are indicated — motivation, simplification, training, and follow-up. Increased attention to the problem of adherence appears to save time, increase satisfaction, and decrease morbidity and mortality among patients.

The realization that nonadherence to medication regimens impedes adequate treatment has sparked a growing number of studies in the area. Although researchers have not come to unanimous conclusions about the causes of nonadherence, their findings yield useful information.

First, it is important to realize that noncompliance is difficult to identify. Clinical improvement may not be related to compliance. Two studies of pediatric patients for whom antibiotics were prescribed revealed a large proportion of nonadherence among the study participants. However, the results of follow-up cultures and examinations showed no correlation between improvement and compliance with the prescribed medication.^{2,3} A study of adult diabetics⁴ also showed no correlation between performance of the prescribed therapy and good or poor control of the disease. Improved clinical status may reflect spontaneous recovery rather than compliance, while lack of improvement may reflect inadequate prescribing rather than noncompliance.

Another factor that makes identification of the noncompliant patient difficult is that patients tend to over-report their compliance with medication regimens.^{5,6} Urine assays and pill counts usually reveal

* Associate Psychologist, Midwest Research Institute, Kansas City, Missouri.

† Assistant Professor, Department of Family Practice, University of Kansas School of Medicine, Kansas City, Kansas.

A Research Project from the Department of Family Practice, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Marvin, Department of Family Practice, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

higher noncompliance rates than self-report measures.

Although the causes for this over-reporting have not been studied in depth, most writers assume that over-reporting is due to some type of perversity on the part of the patient. They imply that patients willfully lie about the extent of their noncompliance. However, several studies have shown that patients will admit major deviations from prescribed recommendations.⁷⁻⁹ It appears that many patients are not aware of their failure to comply with regimens. They forget to take the medicine, and they forget they have forgotten.

Although most physicians know that noncompliance exists, research indicates that few are able to recognize or predict it in their own patients.^{10, 11}

Failure of physicians to identify noncompliance with medication regimens is probably due to the fact that compliance is not a consistent phenomenon. Patients may be fully compliant with some recommendations, and totally noncompliant with others. Roth, Carson, and Hsi¹⁰ found that patients who regularly kept clinic appointments were as likely to deviate from medication regimens as those who did not regularly keep appointments. The authors concluded that the patients who attend clinic most faithfully may believe that visiting the physician, rather than taking medication, is the crucial element in therapy. This study of patients on long-term medication regimens indicated that patients may comply completely with some medications but be less scrupulous about complying with others.

For these reasons, attempts to discriminate between compliers and non-compliers on the basis of personal traits have been largely unsuccessful. In general, it can be said that characteristics such as age, sex, race, socio-economic status, and personality traits are unrelated to compliance.

Correlates of Noncompliance

Haynes¹² stated that the most consistent predictors of compliance with medical recommendations were patients' perceptions of disease severity, efficacy of therapy, and barriers to therapy. It must be emphasized that these predictors arise from the patients' — not the physicians' — views of the illness situation. In fact, there is ample evidence from a wide variety of sources that the medical view of the severity of a disease has no relationship to cooperation with recommendations.^{5, 13-15}

Perceived severity: A large number of studies have been undertaken to investigate the effects of perceived threat of illness on the propensity to adopt health behaviors. Although there is some inconsis-

ency in the findings, it is generally agreed that belief in the personal threat or severity of an illness increases the propensity to undertake action to prevent the illness.^{16, 17} In his review of the literature on the subject, Leventhal¹⁷ also noted that belief in the ability of the proposed action to reduce threat was also an important factor. Findings in this study with regard to patients' willingness to comply in hypothetical situations support this. We found that patients were significantly more willing to comply with hypothetical regimens if the condition were severe and the medication reduced the severity than if the condition was minor or if the medication did not reduce the severity.

A number of studies have shown a significant relationship between perceived severity and adherence of pediatric patients to medication regimens. Children were more likely to receive medications as prescribed if their mothers perceived their illnesses to be severe.^{18, 19} In the current project, a statistically significant correlation was found between actual perceived severity and the actual compliance of the adult patients.

Perceived efficacy: The patients' perception of the ability of the medication to relieve symptoms is also an important correlate of compliance. Caldwell and his associates²⁰ found that a significant number of hypertensives who remained in treatment stated they had more physical comfort with antihypertensive therapy than without it. Our investigation revealed a statistically significant relationship between patients' estimations of the effects of their own regimens on discomfort and their compliance with the regimens. Greater amounts of discomfort after medication therapy were related to greater non-compliance. In addition, our patients were significantly more willing to comply with hypothetical regimens that would make them feel better than with those that would make them feel no different or worse. Surprisingly, patients were no more willing to comply with regimens that made them feel no different than with those that made them feel worse. Patients seemed to have a primary expectation that medication should make them feel better. Our results indicated that prescribed regimens that do not make patients feel better are more likely to be abandoned than those that increase feelings of well-being.

It should be noted that this study concerned adherence to long-term medication regimens. It is a frequent finding, however, that patients on short-term antibiotic therapy fail to take the entire course of therapy because they feel better after a few days and feel continuation of the regimen is unnecessary.²¹ This finding is a further indication that the subjective

effects of medication have a powerful influence on adherence. Feeling better as a result of taking the medication may have differential effects on compliance. In acute conditions — where symptoms subside in a few days — medication regimens that increase feelings of well-being may be abandoned too quickly. In chronic conditions where symptoms recur, long term regimens that increase feelings of well-being will probably have higher adherence rates.

Perceived barriers and complex regimens: Another deterrent to adequate compliance with medical recommendations is related to the difficulty of the recommendations. In general, the research indicates the more a prescribed regimen disrupts a patient's life, the less likely it will be followed. Haefner and Kirscht²² showed that individuals were more likely to get physical examinations from their physicians than to follow other health recommendations. The investigators surmised that getting an annual physical caused less disruption of every day life than altering daily living habits.

Other research on medication regimens has shown that the greater the number of medications prescribed, the greater the noncompliance.^{5, 23} For instance, a study of cardiac patients by Weintraub and associates²⁴ indicated a 22 per cent decrease in adherence to digoxin among patients for whom an additional drug was prescribed. Curtis²⁵ also found that the more medications prescribed, the more errors patients were likely to make in taking medications. A study by Hulka and associates²⁶ reinforced the finding that increases in the number of recommendations foster decreases in compliance.

It has also been found that the duration of the therapy affects compliance. In her review of the literature, Marston⁵ cited several studies demonstrating that the longer a treatment lasted the less it was complied with. Mohler and his associates²¹ found this effect for adults on antibiotic therapy. In a study of the adherence of diabetics to their regimens, Williams and associates⁴ found that the frequency of insulin errors increased with the passage of time.

The financial cost of medication therapy has not been shown to be consistently related to compliance. Many published studies of adherence to medication regimens involve low-income populations. In many cases the drugs were supplied by the investigators or were paid for by a medical assistance program. Therefore, financial cost was not relevant to these studies. However, it appears that cost of the medication may have a relationship with compliance among certain groups of low- and middle-income patients who are not eligible for medical assistance and who

are unwilling to accept such assistance.

Understanding of the Regimen: Perhaps the most obvious reason for nonadherence with prescribed regimens is that patients misunderstand the instructions for taking the medication. Latiolais and Berry²⁷ reported that misunderstanding of the instructions accounted for one-third of the occurrences of non-compliance in their study of indigent patients.

It is obvious that physicians should clearly explain the regimen to the patient. What is not so obvious is how much of the explanation the patient really remembers. Ley and Spelman²⁸ questioned 47 new attendees at a clinic about what a physician had told them during an office visit. Their responses were compared with verbatim records of the visit. The patients remembered two-thirds of the statements the physician had made. The more patients were told, the less they were likely to remember. More importantly, patients tended to forget instructions more frequently than other statements made by physicians. More than half the instructions were forgotten while only 28 per cent of other types of statements were forgotten. Patients appeared to be more attentive to statements about diagnoses and were relatively inattentive to instructions given during visits. The patients may have been thinking about the implications of the diagnosis while the physicians were giving instructions on medical recommendations. Therefore, recommendations may not be carried out simply because they were never properly understood.

Strategies for Improving Adherence

Research indicates that four types of strategies are necessary to improve adherence to medical recommendations: motivation of the patient; simplification of the regimen; training of the patient to carry out the regimen; and follow-up.

Motivation: Patients must believe that there is a good reason for following a prescribed medication regimen. If a patient believes that his/her illness is severe, and that following a prescribed regimen will reduce the severity, then the regimen is likely to be followed. Although the physician is not solely responsible for patients' beliefs about medication regimens, the physician can have a significant influence. However, this influence may depend more on the manner of the physicians' communication than its content. For instance, physicians may seem to downplay the seriousness of some conditions by implying that the condition is not very bad, because all that is necessary is to take a medicine. Research indicates, however, that it would be better to impress the patient with the seriousness of the condition

(when that is true) and then convince the patient that adhering to the regimen will reduce the severity. It is a slight shift in the emphasis of the communication, but the change gives the patient a very good reason for following the regimen.

Family members are often instrumental in helping patients adhere to regimens. Family members should be included in the discussion of diagnosis and medication regimen in order to enlist their support of the regimen.

Patients are also motivated to adhere to the regimen if it is thought to increase feelings of well-being. Patients' explanations of how medication regimens make them feel should be closely noted. When possible, preparations that have positive effects on patients' feelings of well-being should be prescribed. These positive effects may be due to the action of the medication or to placebo effects. It makes little difference; if a patient believes that a regimen makes him feel better, he will be more likely to adhere to it.

Our research indicates that the overwhelming majority of patients expects medications to make them feel better. When regimens do not meet these expectations, special efforts must be made to gain adherence. These efforts should include reduction of negative side effects, and increase of positive side effects. In addition, reemphasis on the severity of the condition and the power of the regimen to reduce the severity may be helpful.

Simplification: A simple regimen is one with as few recommendations as possible, one easily assimilated into the patient's life style. All unnecessary recommendations — especially those that will have little effect on treatment goals — should be eliminated. Adding another medication to a regimen may decrease compliance with all the medications. One method of simplification is prescription of preparations that combine several medications. This practice has been criticized because it limits therapeutic flexibility; however, the outcome of compliance research suggests that combination preparations may be more effective in obtaining compliance (and, therefore, control of the condition) than a number of discrete preparations. If combination drugs are unavailable or unacceptable for treatment, preparations that require the fewest doses per day are preferred. In addition, an attempt should be made to prescribe medications that can be taken concurrently. Schedules that coincide with major activities of daily living, such as meals, bedtime or arising from bed, are probably more easily complied with than medications that must be taken between meals or every six hours.

The second component of a simple regimen is that it can be easily assimilated into a patient's lifestyle.

However, a regimen that may be simple for one patient to follow may be too complex for another. For instance, patients who eat three meals/day at home may have little difficulty complying with a tid regimen. However, patients who do not eat regular meals, or who are away from home most of the day, may find this schedule impossible to follow. Therefore, it is necessary to plan with the patient so that the optimum regimen can be prescribed.

Training: The instruction "Take one tablet three times a day" is deceptively simple. Physicians have assumed that patients will comply with this directive, and patients have assumed it will be no trouble to do so. Therefore, no special efforts have been made by either the physician or the patient to insure that the regimen is followed. Nevertheless, the simple prescription for a tid regimen really requires that the patient institute a habit, perhaps for the rest of his life. The patient must select appropriate times for taking the medicine; he must remember to take it to work or other activities; he must remember that he has taken the medicine so that he does not take more doses than prescribed. If the medicine causes difficulty, the patient must decide whether to continue to take it, to call the physician, or to take other medicine to relieve the symptoms. If the patient remembers that he has missed a dose, he must decide if he should take the dose later than usual, take a double dose the next time, or skip it altogether. For long-term regimens, he must also remember to get the prescription refilled at the proper time so that the medication can be continued without interruption.

The patient must be trained to carry out a medication regimen by an intensive effort to teach the patient both the reasons for the regimen and the mechanics for carrying it out.

The first requirement for adhering to a regimen is an understanding of what the regimen entails. As mentioned above, a single verbal instruction in the context of an office visit will seldom guarantee understanding. Patients need simple but detailed written instructions that can be reviewed after leaving the physicians' office. A number of studies have shown that written instructions in addition to instructions on prescription labels increase adherence to prescribed regimens.^{3, 29} Written instructions are especially necessary when the recommendation does not require the patient to purchase prescription drugs.

Understanding the regimen will not insure adherence unless the patient incorporates the regimen into his/her daily living habits. During the training, the patient should be urged to select the exact times of the day for taking the medicine. In addition, the patient should be advised that remembering to take

the medicine is often difficult. Training should include suggestions for strategies for remembering to take the medication. Some pharmaceutical companies supply reminder stickers that can be placed on mirrors or doors. Placing medication vials on the kitchen table may also be helpful if they are not accessible to small children. Including family members in the training can provide additional support for remembering.

Interviews with patients on long-term regimens revealed an interesting sidelight to the issue of remembering to take medications. For some patients, medication-taking becomes so habitual that it is done almost unconsciously. These patients find it difficult to remember whether they have taken their medication or not. The makers of oral contraceptives have long recognized this problem and have solved it by supplying the tablets in calendar packages. If a user is unsure whether she has taken the medication, she needs merely to check the package to find out whether today's dose is missing. However, the hypertensive patient does not have such a reminder to monitor the number of doses removed from a vial. Calendar packages would undoubtedly help this problem, although they might increase the cost of the medication. A number of other methods have been suggested for remembering. Budesheim³⁰ showed that a medication calendar and separate vials for each day's medications were helpful in increasing adherence to complicated regimens. At the beginning of each week, patients put each day's tablets into seven separate vials. This enabled them to check to see if the entire day's regimen was taken.

An intensive training effort on the part of the physician or the clinic nurse should increase the patient's understanding of the prescribed regimen and should help to incorporate the regimen into the patient's life style. Other benefits may accrue from this training. Patients will become aware that forgetting the medication is a frequent problem and that special efforts must be made to remember to adhere to the regimen. In addition, this training may impress upon the patient the importance of his own role in treating illness.

Follow-up: The final strategy to insure that medication regimens are carried out is careful follow-up. This is especially important in long-term regimens. Patients need to hear from an authority that their efforts at carrying out the regimen have paid off in better control of their condition, especially when the condition is asymptomatic. Physicians should also review the patient's entire regimen at each visit. For instance, a woman who had been on anti-hypertensive medication visited her physician for an acute infection. After the visit, the patient told the re-

searcher that the doctor did not say anything about her blood pressure medication and she wondered if she should continue to take it.

The physician should also carefully interview the patient about how the prescribed regimen makes him feel. Patients who report feeling worse or no different than before medication are likely to abandon the regimen. The physician should also ask the patient if he is complying with the regimen as prescribed. Haynes³¹ suggested that 50 per cent of those who are not complying will admit noncompliance. In these cases the physician should be careful not to scold the patient for honesty, but instead discuss the reasons for the nonadherence. Perhaps the regimen was too complicated, or had negative side effects. Perhaps the patient does not understand the reason for taking the medicine. In some of these instances, the regimen can be changed or the patient can be given further explanations. Once again it may be useful to enlist the family's support, and perhaps to retrain the patient in strategies for remembering.

Careful follow-up requires that the physician keep accurate records of medications prescribed. In our study of compliance, we discovered that medical records could not be trusted to contain the patient's entire regimen. Patients often had prescriptions from a number of physicians. In addition, physicians did not always record what they prescribed. Renewals of prescriptions and discontinuations often went unrecorded. The Family Practice Clinic at the University of Kansas has a special medication card — placed on the inside pocket of the chart cover — where each new prescription and each renewal and discontinuation is recorded. If used properly, this affords a handy reference for determining the regimen as it was prescribed. It may also indicate gross non-compliance with a regimen if a patient has failed to call for renewal of a prescription at an appropriate time.

The implementation of strategies to improve compliance with medication regimens may seem too time-consuming for a busy family practitioner. The processes of motivation, simplification, training, and follow-up are undoubtedly time-consuming. However, some of these tasks can be taken over by the clinic nurse who can use her knowledge of medications, patient teaching, and interviewing to train the patient and to follow-up on the degree of adherence to the regimen. Increased attention to the problem of adherence will save time, increase satisfaction, and decrease morbidity and mortality among patients.

References

References may be obtained from the authors.

Mechanical Ventilation

New Requirements and Refinements

HUGH S. MATHEWSON, M.D.,* and GARETH B. GISH, M.S., R.R.T.,†

Kansas City, Kansas

MECHANICAL VENTILATORS that deliver preset tidal volumes have been in general use for more than 20 years. Within the past decade, constant flow generators have been developed that permit respiratory support to be either assisted (volume preset, rate determined by patient triggering), or controlled (both volume and rate preset). The desired volume is delivered at whatever pressure is required, up to a controllable limit. As long as the pressure limit is not exceeded, the volume delivered by the ventilator during each inspiration is maintained, regardless of changes in compliance or airway resistance. Thus, the volume ventilator provides a reliable way to assure reasonably predictable minute ventilation for extended periods.

In addition to controls of volume, pressure and respiratory rate, a number of other adjustments are necessary to permit the full spectrum of respiratory patterns to be deliverable. The inspiratory flow rate must be controllable, so that the inspiratory-expiratory time ratio can be maintained within flexible limits (about 1:1 to 1:5). The amount of negative pressure required to initiate assisted breaths should be determinable by a control device; this is usually called the sensitivity control.

In assisted and controlled respiration all the inspired gas is metered from the internal chamber (volume monitoring device) of the mechanical ventilator. With constant volumes administered repetitively over extended periods, optimal blood gas values can be maintained in many instances. When tidal volumes are kept within the physiologic range, however, microatelectasis tends to develop in the dependent portions of the lungs. To counteract this, "sigh systems" have been provided to deliver inspired volumes 50-100 per cent above tidal values at frequent intervals. Although this is reputed to simulate a physiologic mechanism, induced sighing does not always prevent microatelectasis from occurring.¹ Recently its worth has been seriously questioned.²

The present viewpoint is that ample tidal volumes, on the order of 10-15 ml/kg, are necessary to prevent progressive alveolar collapse.

Mechanical ventilators of recent design offer solutions to respiratory problems that were difficult or impossible with older models. Versatility of performance is greatly enhanced with integral positive end-expiratory pressure (PEEP) control, and with synchronized intermittent mandatory ventilation (SIMV) and continuous positive airway pressure (CPAP) as additional modalities. Management of cases with restrictive ventilatory defects, relief of patient-ventilator asynchrony, and facilitation of the weaning process exemplify the wider applicability and greater safety afforded by the newer machines.

Proper maintenance of lung expansion is facilitated when ventilatory exchange is unimpeded, and sufficient pressure is exerted to maintain functional residual capacity (FRC), and to keep small airways open. This latter requirement may be fulfilled only if positive pressure is exerted through the whole respiratory cycle (continuous positive pressure ventilation, CPPV). The usual way to accomplish this is to maintain a residuum of system pressure at the end of expiration (positive end-expiratory pressure, PEEP).³ A PEEP control was first offered as an optional attachment; then as its indispensability became evident it was incorporated as an integral component on the newer machines.

Physical Variables

If pressure, volume, rate and flow can all be controlled, gas exchange can easily be maintained at any desired set of physiologic values. Patients with primary respiratory failure suffer from either depressed brainstem respiratory centers or from neuromuscular paralysis. Usually lung function is normal, at least initially, and the impedances to pulmonary and chest wall expansion are not increased. Controlled respi-

* Professor of Anesthesiology and Medical Director, Respiratory Therapy.

† Adjunct Associate Professor of Anesthesiology.

ration is preferable, but assisted breathing is satisfactory, provided the patient's cycling rate is within normal limits. System pressure can be allowed to fall to zero during expiration, thus minimizing interference with venous return.

The foregoing conditions can be acceptably managed by continuous flow generators which have been in general use for a decade. Difficulties arise, however, when there are marked changes in elastic and non-elastic resistances, or when the patient does not readily conform to the ventilatory pattern imposed by the machine. Newer refinements in ventilator design have, to a considerable degree, surmounted these problems.⁴

Ventilatory Impedance

The term impedance includes the elastic resistances of the lungs and chest wall, as indicated by the total thoracic compliance, and non-elastic resistances, principally those exerted by the airways. Of these, the elastic resistances are of greater importance in the present discussion. A decrease in compliance of the lungs and chest wall increases the work the patient must exert to sustain normal gas exchange. The application of intermittent positive pressure meets this increased work requirement, but does not prevent the collapse of alveoli and small airways during the expiratory phase. The result is a progressive decline in vital capacity, particularly the FRC, increasing ventilation-perfusion mismatch, and arterial hypoxemia due to venous admixture.

The introduction of PEEP as a controllable parameter enabled continuous positive pressure to be delivered throughout the respiratory cycle without serious interference with venous return.⁵ The first PEEP devices simply caused a partial occlusion of the expiratory port. Improvements in design, incorporating a threshold flow resistor, now provide an end-expiratory pressure plateau without significant interference with expiratory gas flow. The PEEP control is now a standard appurtenance of the modern ventilator.

Patient-Ventilator Asynchrony

When the patient's ventilatory effort conflicts with the machine cycle, alveolar gas exchange may be seriously impaired. Employment of the assist mode may effect some improvement, but often the patient's inspiratory rate is too rapid. Application of generous tidal volumes necessary to maintain lung expansion then results in carbon dioxide washout and progressive alkalosis. This can be particularly hazardous if the patient has retained bicarbonate to compensate for chronic underventilation.

The patient who fights the machine to the extent that asynchrony interferes with proper gas exchange has some capacity for spontaneous breathing. If an unrestricted system can be provided, breathing can occur according to the patient's own cycling rate, and at airway pressures that do not impede venous return. Some supplementation will be required, and this can be given intermittently by positive pressure cycles from the ventilator. This modality is termed intermittent mandatory ventilation (IMV).

IMV systems were introduced as external attachments to the ventilator.⁶ They required a separate gas source, delivering a continuous flow to a breathing bag that provided an essentially unlimited reservoir of gas for spontaneous breathing. A mandatory rate and volume were preset on the machine; at the prescribed interval this positive pressure breath closed a one-way valve, shut off the reservoir, and administered the preset volume to the patient. Since the mandatory rate was predetermined, the machine-controlled breath might be delivered at any time during the patient's spontaneous cycle. This constituted a source of patient-ventilator conflict. Further, the spirometric device on the ventilator was poorly adapted to measure the spontaneous exchange, and minute ventilation could be estimated only by resorting to still another supplemental device.

Manufacturers of ventilators then began to employ so-called demand systems, devices which the patient could open with negative inspiratory pressure, providing an essentially unlimited gas source. First developed as external attachments, these were later incorporated as part of the machine. The ventilator of recent design offers either continuous or intermittent ventilation, with the gas delivered from a single source. The integral IMV system offers a number of unique advantages:

1. Both the demand (spontaneous) and the mandatory (machine) breaths can be triggered by the patient, thus eliminating an important cause of asynchrony. The negative inspiratory pressure required to initiate mandatory breaths and to open the demand reservoir is determined by the sensitivity control. The mode just described is termed synchronized intermittent mandatory ventilation (SIMV).
2. Both demand and mandatory breaths are measured by the ventilator spirometer.
3. The PEEP control operates in both demand and mandatory cycles.
4. A safety backup system is provided if the patient becomes apneic and spontaneous triggering is suspended. If an interval of several seconds has elapsed without the patient's initiating a breath, the

ventilator not only delivers the mandatory volume, but also reverts automatically to a preset system offering continuous mandatory ventilation.

Weaning

Withdrawal of ventilatory support is considered when blood gas values are stable and spirometric performance tests indicate the patient's ability to perform the requisite work of breathing.⁷ Successful weaning is usually accompanied by a progressive increase in tidal volume and decrease in respiratory rate, both of which are evident within 30 minutes. Unsuccessful weaning is characterized by the opposite effects, decreased tidal volume and increased rate, whereupon the necessity for further ventilatory assistance becomes obvious. Occasionally a patient is encountered who fulfills the criteria for weaning but whose spontaneous performance is equivocal, and where some doubt exists whether spontaneous breathing can be continued. The usual practice in the past with the intubated patient on a T-tube was to alternate spontaneous trials and intervals of continuous mandatory ventilation.

With the advent of IMV, weaning could be more easily accomplished by allowing the patient to draw spontaneous breaths from the demand source, and to deliver occasional mandatory cycles that could be gradually decreased in frequency. When integral IMV systems became available, synchronized IMV could be effectively utilized for gradual, comfortable, and safe withdrawal from the ventilator. Continuous display of tidal volume and rate by the machine furnishes ongoing spirometric data which, coupled with serial blood gas determinations, provides maximal controllability throughout the weaning period.

Some patients, particularly those with restrictive problems accompanied by low FRC values, are more efficiently weaned if continuous positive pressure breathing can be maintained.⁸ SIMV and PEEP can be of value in accelerating the withdrawal process. As noted previously, the PEEP control on the newer ventilator models operates in both demand and mandatory cycles, thus providing a continuous baseline pressure. The mandatory rate can be gradually reduced to zero; the patient is then entirely on spontaneous breathing with pressure applied. This is similar to continuous positive airway pressure (CPAP) in a simple bag-and-connector breathing circuit, and has come to be termed the "CPAP mode." According to this definition, CPAP on the mechanical ventilator is simply IMV with PEEP, with the IMV (mandatory) rate set at zero.

References

1. Housley, E.; Louzada, N. and Becklake, M. R.: To sigh or not to sigh. *Am. Rev. Respir. Dis.* 101:611, 1970.
2. Fairley, H. B.: The mechanical ventilation sigh is a dodo. *Respir. Care* 21:1127, 1976.
3. Wayne, K. S.: Positive end-expiratory pressure ventilation: A review of mechanisms and actions. *JAMA* 236:1394, 1976.
4. Baum, M. and Benzer, H.: Physical aspects of automatic respirators. *Med. Prog. Technol.* 3:105, 1975.
5. Demers, R. R.; Irwin, R. S. and Braman, S. S.: Criteria for optimum PEEP. *Respir. Care* 22:596, 1977.
6. Downs, J. B., et al.: Intermittent mandatory ventilation: A new approach to weaning patients from mechanical ventilators. *Chest* 64:331, 1973.
7. Sahn, S. A.; Lakshminarayan, S. and Petty, T. L.: Weaning from mechanical ventilation. *JAMA* 235:2208, 1976.
8. Feeley, T. W., et al.: Weaning from controlled ventilation and supplemental oxygen. *New Engl. J. Med.* 292:903, 1975.

Cardiorespiratory Syndrome

(Continued from page 129)

Summary

Cases were presented of two young children who developed pulmonary edema and cardiac enlargement from tonsilloadenoid hypertrophy. Symptoms and physical findings disappeared following tonsillectomy.

References

1. Menache, V. D.; Farrechi, C. and Miller, M.: Hypoventilation and cor pulmonale due to chronic upper airway obstruction. *J. Pediatr.* 67:198, 1965.
2. Noonan, J. A.: Reversible cor pulmonale due to hypertrophied tonsils and adenoids: Studies in two cases. *Circulation* 32 (Suppl. 11):164, 1965.
3. Luke, M. J.; Mehrizi, A.; Folger, G. M. and Rowe, R. D.: Chronic nasopharyngeal obstruction as a cause of cardiomegaly, cor pulmonale, and pulmonary edema. *Pediatrics* 37:762, 1966.
4. Bland, J. W., Jr., and Edwards, F. K.: Pulmonary hypertension and congestive heart failure in children with chronic upper airway obstruction: New concepts of etiologic factors. *Am. J. Cardiol.* 23:830, 1969.
5. Talbot, A. R. and Robertson, L. W.: Cardiac failure with tonsil and adenoid hypertrophy. *Arch. Otolaryngol.* 98:277, 1973.
6. Goodman, R. W.; Goodman, M.; Goodman, N. and Cohen, H.: Cardiac and pulmonary failure secondary to adenotonsillar hypertrophy. *Laryngoscope* 86:1367, 1976.
7. Fishman, A. P.: Hypoxia on the pulmonary circulation: How and where it acts. *Circ. Res.* 38:221, 1976.
8. Staub, N. C.: Pulmonary edema due to increased microvascular permeability to fluid and protein. *Circ. Res.* 43:143, 1978.
9. Levy, A. M.; Tabakin, B. S.; Hanson, J. S. and Nar-kewicz, R. M.: Hypertrophied adenoids causing pulmonary hypertension and severe congestive heart failure. *N. Engl. J. Med.* 277:506, 1967.
10. Thanopoulos, B.; Ikkos, D. D.; Milingos, M. and Foutakis, D.: Cardiorespiratory syndrome due to enlarged tonsils and adenoids: A case report of discussion regarding medical treatment and pathogenesis. *Acta Paediatr. Scand.* 64:559, 1975.
11. Cogswell, J. J. and Easton, D. M.: Cor pulmonale in the Pierre-Robin syndrome. *Arch. Dis. Child.* 49:905, 1974.

Pediatric Nephrology

A Three-Year Experience in a General Hospital

HAROLD L. HARRISON, M.D. and

MICHAEL A. LINSHAW, M.D., *Kansas City, Kansas*

PEDIATRIC NEPHROLOGY is a subspecialty of pediatrics in which the physician deals primarily with problems related to renal parenchymal disease, acid base disturbances, and fluid and electrolyte disorders. Although several pediatricians have pioneered in the area of pediatric nephrology in the last 30-40 years, the emergence of a number of pediatric nephrology programs throughout the country has only been realized over the last 10-15 years. Clearly the pediatric nephrologist can provide helpful services to the pediatrician, general practitioner, and surgeon well beyond the area of dialysis and transplantation. In view of the increasing number of patients seen at the University of Kansas Medical Center whose problems relate to this subspecialty, it appears constructive to review the experience over the last three years at this institution so as to summarize the ser-

vices that are available, as well as the specific types of problems encountered.

Pediatric nephrology services at the University of Kansas Medical Center were analyzed in relation to frequency and types of problems encountered from outside referrals and in-hospital consultations. Services are provided for 2.6 new patients per week. Only 7 per cent of the patients were uremic with only 2 per cent requiring dialysis.

The following tables summarize those patients directly referred to the pediatric nephrology service for evaluation and treatment; separately summarized are those patients for whom a consultation was requested from the pediatric staff at the University of Kansas Medical Center. The general nature and frequency of referrals from outside of this institution are summarized in *Table I*. Thirty per cent of the patients had some form of glomerulonephritis, approximately one fourth of these being related to post

TABLE I
REFERRALS

Diagnosis	7/75-7/76	7/76-7/77	7/77-7/78	Total	Percentage
Benign hematuria	7	6	6	19	9
Post streptococcal glomerulonephritis	4	6	5	15	7
Glomerulonephritis (1)	19	12	18	49	23
Proteinuria	4	3	1	8	4
Nephrotic syndrome	11	13	7	31	15
Urinary tract infection	12	16	6	34	16
Pyelonephritis	2	2	1	5	2
Hypertension	1	2	1	4	2
Developmental anomalies (2)	9	4	3	16	8
Other (3)	12	11	6	29	14
Total	81	75	54	210	100

(1) Primary *e.g.* focal glomerulonephritis, or Secondary *e.g.* lupus nephritis.

(2) Cystic diseases, single kidney, horseshoe kidney, dysplastic kidneys, tuberous sclerosis, posterior urethral valves, duplicated collecting system.

(3) Hemolytic uremic syndrome, Wegener's granulomatosis, scleroderma, enuresis, frequency, polyuria, hypercalcemia, oxalosis, hyperuricemia, renal trauma, acidosis, asphyxiating thoracic syndrome.

TABLE II
CONSULTATIONS

<i>Reason for Consultation</i>	<i>7/75-7/76</i>	<i>7/76-7/77</i>	<i>7/77-7/78</i>	<i>Total</i>	<i>Percentage</i>
Azotemia	10	6	5	21	10
Hematuria	15	6	6	27	13
Proteinuria	2	1	5	8	4
Urine sediment change	5	4	4	13	6
Urinary tract infection	1	4	4	9	5
Fluid and Electrolyte	22	33	16	71	35
Structural anomalies	7	10	13	30	15
Hypertension	2	7	4	13	6
General consults	3	6	3	12	6
Total	67	77	60	204	100

streptococcal glomerulonephritis. While 15 per cent of the patients had nephrotic syndrome, a much smaller percentage of patients were referred with isolated proteinuria of levels not consistent with nephrotic syndrome. In addition, patients with urinary tract infection did not represent an overwhelming majority of the patients seen. This probably relates to the fact that many patients with urinary tract infections are seen either in the general pediatric clinic or cared for through the emergency room facility, and such patients are not generally referred to this clinic unless there is some complication associated with the urinary tract infection (recurrent or difficult to control infections, those associated with azotemia, hypertension, or urinary tract abnormality).

The general reasons for in-hospital consultations over the three-year period are summarized in *Table II*. Although several consultations have been requested by the orthopedic, general, cardiovascular and urologic surgical services, most consultations derive from requests within the department of pediatrics. Thirty-five per cent of the consultations were related to fluid and electrolyte or acid-base

disturbances. Although consultations were most frequently for fluid and electrolyte problems over the three-year period, the number of consultations in this area has dropped in the last year. There is a rough correlation in the decrease in fluid and electrolyte consultations with a step-up in the teaching program regarding fluid and electrolyte therapy. Only 10 per cent of the patients seen were azotemic, a frequency that contrasts sharply with that reported several years ago by the adult nephrology service in which consultation for patients with azotemia occurred with a 29-per cent frequency.¹ This finding is not surprising since severe renal disease is considerably less common in children than in adults. Consultations for other problems related to the kidney have been seen at a relatively constant frequency. On the average, consultations have been for a variety of problems at a rate of 68 instances in a given year, or somewhat more than one consultation/week.

Table III summarizes those patients requiring major intervention on the part of the pediatric nephrologist (renal biopsy or therapy for uremia). As shown in the table, the number of renal biopsies per year (15 on the average) is relatively constant. Of 18

TABLE III
SUMMARY OF PATIENTS REQUIRING RENAL BIOPSY AND/OR THERAPY FOR UREMIA

	<i>7/75-7/76</i>	<i>7/76-7/77</i>	<i>7/77-7/78</i>	<i>Total</i>
Acute renal failure*	7	4	7	18
Acute peritoneal dialysis	1	0	2	3
Chronic renal failure*	8	3	0	11
Chronic peritoneal dialysis	1	1	1	3
Renal transplantation†	0	1	1	2
Renal biopsy	17	15	13	45

* As presented, the majority of patients with acute and chronic renal failure have been or are presently being managed medically pending progression of the underlying disease.

† One of the patients receiving renal transplant was on chronic hemodialysis, the other patient received chronic peritoneal dialysis.

patients who presented with acute renal failure, only three required dialysis. Of 11 patients in chronic renal failure, only 4 have required dialysis. Three of these patients underwent chronic peritoneal dialysis and the fourth was placed on chronic hemodialysis. Two of these patients have received renal transplants; both have had their transplants for over a year and are stable at the present time.

The number of consultations per year within the institutional setting has remained relatively constant over the three-year period. The number of referrals from outside the hospital has decreased somewhat over the three-year period, a finding most likely related to the fact that a large number of patients were initially referred back to the pediatric nephrology clinic for follow-up after a several-month hiatus in 1974, during which time the institution did not have the services of a trained pediatric nephrologist. It is clear, however, from *Table I* that there are more than 200 children being followed with some kidney-related problem, and this number will probably steadily increase. It should be pointed out that the present data does not include telephone consultations of the order of 3-5 consultations/week for disorders similar to those enumerated in the tables. Although the number of patients presently either on chronic dialysis or post transplant is relatively small, this group of patients probably will also gradually increase over the next several years. At the present time there are three additional patients in the renal clinic who are close to the point of needing chronic dialysis. Thus the potential need for additional staff is real. While the nephrologist is often identified as the physician who cares for patients predominately with chronic renal failure, it is clear from this report that the pediatric nephrologist sees a wide spectrum of illnesses only a small percentage of which relate to chronic dialysis and transplantation.

References

1. Grantham, J. J. *et al.*: Pattern of consultation in a general hospital. *J. Kans. Med. Soc.* 75:95-97, 1974.

Total Care

(Continued from page 118)

References

1. Sutow, W. W.: General Aspects of Childhood Cancer, *Clinical Pediatric Oncology*, second edition (Sutow, W. W.; Vietti, T. J. and Fernbach, D. J., eds), St. Louis, C. V. Mosby, pp. 1-15, 1977.
2. Brouet, J. C. and Seligmann, M.: The immunological classification of acute lymphoblastic leukemias. *Cancer* 42:817-827, 1978.
3. Ramirez, L.; Sullivan, M. P. and Wang, Y. M.: Systemic high dose cytoxan — high dose methotrexate therapy with coordinated intrathecal methotrexate for a putative B cell acute lymphocytic leukemia sub group. *Proc. Am. Assoc. Cancer Res.* 19:152, 1978.
4. Gathing, N. E.; Lawton, A. R. and Cooper, M.D.: Immunofluorescent studies of the development of pre-B cells, B lymphocytes and immunoglobulin isotype diversity in humans. *Eur. J. Immunol.* 7:804-810, 1977.
5. Smith, S. D.; Uyeki, E. M. and Lowman, J. T.: Colony formation in vitro by leukemic cells in acute lymphoblastic leukemia (A.L.L.). *Blood* 52:712-718, 1978.
6. Frei, E. and Sallan, S. E.: Acute lymphoblastic leukemia: Treatment. *Cancer* 42 (suppl.):828-838, 1978.
7. Newman, J.; Josephson, A. S.; Cactian, A. and Tsang, A.: Spinal fluid lysozyme in the diagnosis of central nervous system tumours. *Lancet* 2:756, 1974.
8. Eys, J. V.: Malignant tumors of the central nervous system. *Clinical Pediatric Oncology*, second edition (Sutow, W. W.; Vietti, T. J. and Fernbach, D. J., eds), St. Louis, C. V. Mosby, pp. 487-505, 1977.
9. Gutin, P. *et al.*: Phase II study of procarbazine, CCNU, and vincristine combination chemotherapy in the treatment of malignant brain tumors. *Cancer* 35:1398-1404, 1975.
10. Schimpff, S.; Satterlee, W.; Young, V. M. and Serpick, A.: Empiric therapy with carbenicillin and gentamicin for febrile patients with cancer and granulocytopenia. *N. Engl. J. Med.* 284:1061-1065, 1971.
11. Feldman, S.; Hughes, W. T. and Daniel, C. B.: Varicella in children with cancer: Seventy-seven cases. *Pediatrics* 56:388-397, 1975.
12. Hughes, W. T. *et al.*: Successful chemoprophylaxis for pneumocystis carinii pneumonitis. *N. Engl. J. Med.* 297:1419-1426, 1977.
13. Lawson, B.: Chronic illness in the school age child. *MCN* 1:49-56, 1977.
14. Tucker, M. A.: Effect of heavy medical expenditures on low income families. *Public Health Rep.* 85:419-425, 1970.
15. Lansky, S. B. *et al.*: Childhood cancer: Non-medical costs of the illness. *Cancer* 43:403-408, 1979.

Rheumatology Traineeship for the Practicing Physician

HERBERT B. LINDSLEY, M.D.;* NABIH I. ABDOU, M.D., Ph.D.;†
ROBERT GODFREY, M.D.* and DANIEL STECHSCHULTE, M.D.,†
Kansas City, Kansas

CONTINUING education programs acceptable for practicing physicians typically are packaged as a series of lectures extending from one to five days; an occasional physician may spend a month or more at a university center participating in an ongoing education program for residents. For several years, this division offered a one-month fellowship in rheumatology under the personal direction of one faculty member. The special fellows participated in the ongoing educational activities for residents and fellows, with individualized instruction of approximately one hour/day. Over a period of six years, six individuals took a combined total of 12 months of such instruction; however, because of the one-month requirement, this format appealed to few Kansas physicians. In 1978, Kansas physicians were offered a traineeship of one or two weeks' duration. Over a period of four months there were 19 applications for one week and four applications for two weeks; thus a one-week traineeship was initially offered, with a second week program approximately one year later. This report is based on the first one-week program given to five physicians in September 1978.

The design of this traineeship is substantially different from the four-week fellowship previously offered. In order to satisfy educational requirements for the American Academy of Family Practice (prescribed credit), as well as the American Medical Association (Category I), a highly structured program (*Table I*) — consisting of patient clinics, case presentations, tutorials, and lectures — was utilized. Although more than half of the time was devoted to practical points in diagnosis and treatment, closely related fields were introduced as well (*Table II*).

This small group traineeship program has been designed to conform to both time limitations and educational requirements of the practicing primary care physician.

Standardized testing was conducted at the beginning and end of the course.

This traineeship differs from more traditional formats for continuing education. First, the program was designed to teach four to six trainees at one time in a single conference room containing a variety of educational materials. This provided an opportunity for the trainees to learn from each other as well as from the faculty and encouraged informal interaction between the trainees and faculty. The multidisciplinary faculty included 13 physicians (rheumatologists, physiatrists, surgeons, and a

TABLE I
ALLOCATION OF TIME BY LEARNING METHOD

Method	Time (hr)
Tutorial/lecture	24
Clinics	7
Case conference	4
Examination	4
Other	1
	40
Self-Study	6

TABLE II
ALLOCATION OF TIME BY SUBJECT

Subject	Time (hr)
General rheumatology	28
Rehabilitation medicine	3
Immunology	3
Surgery, reconstructive	2
Radiology	2
Other	2
	40
Self-Study	6

From the Division of Allergy, Clinical Immunology and Rheumatology, Department of Medicine, University of Kansas School of Medicine, Kansas City, Kansas.

* Assistant Professor of Medicine.

† Professor of Medicine.

Address reprint requests to Dr. Lindsley, Department of Medicine, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

TABLE III
RESULTS OF A STANDARDIZED RHEUMATOLOGY
EXAMINATION ADMINISTERED TO THE 5 TRAINEES
AT THE BEGINNING AND END OF THE COURSE

Physician No.	Exam Results	
	DAY 1	DAY 5
1	7*	65
2	<3	39
3	<3	21
4	12	98
5	<3	62

* Percentile.

radiologist) and five allied health personnel (nurse clinicians and occupational and physical therapists). Evening self-study was encouraged but not monitored; reading assignments for the rheumatology and immunology texts were provided. Commercially prepared slide-tape series were also available. This program is notable in that it is actively cosponsored by the Kansas Chapter of the Arthritis Foundation; the Chapter paid the registration and tuition fees for each trainee, in addition to providing textbooks of rheumatology and immunology.

The trainees were asked to critique the five-day program. All five rated the course as "excellent" and requested a second week in about one year. Two of them considered it their best educational experience since medical school. The most highly rated items included choice of rheumatology textbook (*Rheumatic Diseases: Diagnosis and Management*, edited by W. Katz, J. B. Lippincott Co., 1977), informal presentations, arthritis clinics, and radiology. Formal slide-oriented presentations and one research presentation on immunology were less well received. For a second one-week course most asked for additional time devoted to immunology.

A standardized examination in rheumatology was administered at the beginning and the end of the course. The examination included questions on material not covered in the course. All five trainees improved substantially in their fund of knowledge (Table III). An examination prepared by the traineeship faculty was given only on the fifth day; scores ranged from 67-87 per cent with four of five scores at least 82 per cent.

Based on the interest and enthusiasm of this group, we anticipate the trainees will improve their management of arthritis patients. In the two weeks following the course, one participant made his first diagnosis of polymyalgia rheumatica and treated the patient appropriately with excellent results.

Faculty preparation and presentation time was substantial, but proved to be a good investment in terms of trainee response (excellent), improvement in trainee knowledge (very good), and improved communication between primary care physicians and the Medical Center. Trainees are now acquainted with all personnel at UKSM-KC involved in diagnosis and treatment of patients with rheumatic diseases. The small group traineeship will probably develop as an important adjunct to the more formal didactic continuing education programs presently offered by most educational institutions.

Acknowledgments

Personnel who have assisted in the presentation of this program include: physicians — Richard Day, M.D.; Arthur DeSmet, M.D.; James Harris, M.D.; Lynn Ketchum, M.D.; John Layle, M.D.; Carol Lindsley, M.D.; Larry Perry, M.D.; Fred Reckling, M.D.; and John Redford, M.D.; allied health personnel — Karen Connant, OTR; Judy Ervin, RN; Diane Lee, MSW; Valerie McCann, RN, MN; and Judy Perry, RPT; and divisional secretaries — Anne Scott and Nancy Uhlman.

Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

Pediatric Breast Disease

A Review of Diagnostic Criteria

DAVID R. STEWART, M.D., and
FREDERICK B. STEHMAN, M.D., *Kansas City, Kansas*

MOST PEDIATRIC surgeons have faced an anxious parent or worried referring physician of a child with a breast mass; it is fortunate that the lesion is benign in the vast majority of cases. The prepubertal child will rarely develop a malignancy, but it is always necessary to distinguish the occasional neoplasm from the common developmental, traumatic, or inflammatory lesions.

During the 12 years ending in December 1976, 36 pediatric patients with breast disease were treated surgically at the University of Kansas Medical Center. An unknown number was seen and not operated upon. Rather than add new data to the literature, this paper seeks to utilize findings on these 36 patients as the focal point of a review of the distinguishing features of the principal pediatric breast disorders.

Materials and Methods

Among the 36 patients, 10 were males. All of these had gynecomastia. Of the 26 females, 11 had fibroadenomas, 6 had juvenile hypertrophy, and the remainder had assorted other lesions. There were no malignant neoplasms. The age of patients varied from 14 days to 16 years (*Table I*).

Fibroadenoma

Almost one-third of the patients in this small series had surgical removal of a fibroadenoma. This figure corresponds with the reports of much larger series,¹⁻³ in which fibroadenoma is listed as being overwhelmingly the most common breast lesion in the pediatric age range. Of all fibroadenomas, 10-15 per cent occur in pediatric patients.⁴ Ten of our patients were black, a racial predilection noted by others and which also appears to favor the occurrence of a juvenile type of fibroadenoma.³ Six of our 10 black patients had juvenile fibroadenoma in which there was hypercellularity of the stroma, as compared with

The varying manifestations of pediatric breast disorders necessitate careful diagnosis to determine the appropriate treatment. Information culled from experience with pediatric patients at the University of Kansas School of Medicine is utilized in reviewing the distinguishing features of the principal pediatric breast disorders with emphasis on criteria for surgical intervention.

an adult fibroadenoma. The consistency of the tumor differs in that it is softer and the capsule is less distinct than that of the adult type. Surgical separation from the surrounding normal breast tissue is often quite difficult. Were it not for the fact that these tumors are virtually always unilateral, the lesion could be readily confused with juvenile hypertrophy. The remaining five patients had an adult type of fibroadenoma as far as histological appearance was concerned, but it should be emphasized that neither the size of the lesion nor the amount and cellularity of the stroma have any relationship to prognosis. There is no good evidence that fibroadenomas become malignant. All fibroadenomas may be adequately treated by surgical excision, although care must be

TABLE I
UKSM PATIENTS
PEDIATRIC BREAST DISEASE

Sex: 26 females 10 males	
Age: 14 days to 16 years	
Diagnosis:	
Fibroadenoma	11
Gynecomastia	10
Juvenile Hypertrophy	6
Mastitis/Abscess	5
Fat Necrosis	1
Hamartoma	1
Mycosis Fungoides	1
Hypomastia	1

From the Departments of Surgery and Pediatrics, Division of Pediatric Surgery, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Stewart, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

taken to search for multiple lesions. Most patients in this series had noted a painless breast mass which grew slowly over varying lengths of time, but at times, a history of very rapid growth associated with pain was present. In one patient, the lesion appeared six months after a normal pregnancy and delivery; all other patients were nulligravida. None of our patients has had a recurrence. No information exists as to the cause of fibroadenomas, but occasionally patients have been reported with a relatively high estrogen content in the urine, and the periodic association of the disease with pregnancy suggests a hormonal influence. Kern⁵ has recently reported a series of patients that in his opinion demonstrates regression of fibroadenoma to fibrosis, and he related menopausal hormonal change to the transformation.

Gynecomastia

Ten males in our series were operated upon for gynecomastia, but these obviously represent the extremely symptomatic end of the spectrum of this disease. Nearly three-fourths of all normal adolescent males may be found to have a discrete subareolar nodule on one or both sides. This is generally present between the ages of 13 and 18, disappearing spontaneously, and any exaggeration of this situation is known as gynecomastia. Half of our patients had bilateral disease, somewhat greater than the generally reported figure of 15-20 per cent. The presenting symptom is usually an enlarging breast which may be tender. For the most part, no treatment is indicated for this disease, but occasionally a subcutaneous or simple mastectomy may be performed for cosmetic reasons.

Histological examination reveals an increase in connective tissue, proliferation of ducts without acinar proliferation, increased vascularity, and at times, infiltration by chronic inflammatory cells. Most of these lesions are idiopathic in origin, with hormonal imbalance in a pubertal male being the most likely explanation. Rarely, gynecomastia may reflect an underlying disorder, such as a testicular, hepatic or adrenal malignancy, or a true genetic abnormality such as Klinefelter's syndrome. Exogenous drugs — both steroidal and non-steroidal — as well as Digoxin or Dilantin can also cause gynecomastia. Bannayan and Hajdu⁶ studied 351 cases of gynecomastia and found that pubertal and hormonal-induced gynecomastia tends to be bilateral and diffuse, whereas idiopathic cases were unilateral and discrete. After carefully eliminating all the treatable causes of the disease, reassurance that the process will spontaneously resolve is all that is usually necessary.

Juvenile Hypertrophy

Reduction mammoplasty was the treatment employed for six patients with juvenile hypertrophy. This unusual disorder is characterized by rapid enlargement of one or both breasts entirely out of proportion with the general body growth. This progressive enlargement follows normal onset of breast development in the adolescent female, producing — over a two or three year period — symmetrically enlarged pendulous breasts with prominent superficial veins. The breasts are diffusely firm, generally nontender, and minimally nodular, although coexistent fibroadenomas may be present. As is the case with gynecomastia, histologic examination reveals an increase in periductal fibrous stroma with proliferation and increased branching of the ducts but no lobule formation. As one would expect from the history, the histologic picture is essentially an exaggeration of the normally developing breast. Each of our patients had a normal endocrine evaluation. Most authors believe that juvenile hypertrophy develops as a result of end organ hypersensitivity to normal hormonal stimuli of puberty.

Cystosarcoma Phyllodes

We have had no recent cases of this interesting tumor with the ominous sounding name. Although it occurs primarily in adults, it is reported to be the second most common cause of massive breast enlargement in females.⁷ It is usually benign, but McDivitt⁸ has reported a malignant form in adults, and Hoover⁹ described a case of metastatic cystosarcoma phyllodes in an adolescent. That tumor pursued a particularly virulent course with widespread metastases resistant to all forms of therapy and represents the only reported death in the pediatric age group for this disease. Characteristically, an older adolescent female reports an asymmetric enlargement of one breast. Examination reveals a firm smooth, mobile, circumscribed mass which may be indistinguishable from a fibroadenoma. There may be multiple or bilateral masses, but more commonly a second mass in the same or opposite breast proves to be a fibroadenoma. It is usually possible to separate the mass from normal breast tissue at the operating table, and local excision with a margin of normal breast tissue is the treatment of choice to prevent recurrence. If histologic examination reveals malignancy, simple mastectomy is the preferred procedure for cure. Metastases are very rare, and occur via the hematogenous route, making radical mastectomy inappropriate. The microscopic appearance of the tumor is like that of a fibroadenoma. It is

here that the malignant degeneration may be seen although it is uncommon.

Developmental Breast Abnormalities

There are four different forms of lesions seen in young females all of which require a similar approach, namely: they must not be biopsied.

Neonatal breast buds begin to develop in the 6th to 7th fetal week but are not palpable until the 34th week. At term the discrete subareolar mass may be 4-10 mm in diameter. The breast may be asymmetric and the buds always involute over a several-week period. Both sexes are affected and there may be an associated production of "witch's milk." All of the factors are presumably a result of maternal and placental hormonal influences, and have no significance for the infant except for the fact that the neonatal breast may be a site for a staphylococcal infection which may, like the infection seen in the lactating breast, be a result of the hormonal stimulus. *Premature thelarche* is the presence of normal bilateral breast tissue before the age of eight years. There is no other sign of sexual maturation and the breast enlargement is not progressive, may regress, or may persist until true puberty. Most authors describe this phenomenon as occurring in the first to fourth years of life. Rarely is it the first sign of precocious puberty. In that instance it is part of a generalized sexual development with gross acceleration and maturation. The onset is usually before age nine years, and in most instances the origin is idiopathic. Because a few cases can be associated with recognizable lesions, a full endocrine evaluation and search for an occult tumor are indicated. Premature breast development and prepubertal breast development deserve mention because they are normal and need not be biopsied.

Carcinoma

Finally, carcinoma of the breast must be mentioned to emphasize the fact that it is not nearly as ominous a lesion in the child as was once thought. Nichini studied 50 cases of carcinoma of the breast in patients under the age of 20 years — two of whom were males — and most authors cite an incidence of around 1 per cent of all cancers of the breast occurring in patients under the age of 20 years.¹⁰⁻¹² Formerly, it was thought that these tumors were particularly resistant to treatment and there was some concern, therefore, about doing a radical operation for cure. Recently, however, several groups of au-

thors have pointed to the fact that carcinoma of the breast occurring in younger patients may have as good a prognosis as that in older patients, and in one study from the Mayo Clinic, a better prognosis was noted. All types of carcinoma can occur. McDivitt described a "juvenile carcinoma" in seven patients with a mean age of nine years, in whom effective treatment consisted of excisional biopsy.¹³ Histologically, these tumors consisted of cells arranged in cords or acini, with prominent secretory material both in cell cytoplasm and acinar lumens. Oberman and Stephens¹² have added two more such cases; both patients have survived after simple excision.

Recognition of the disease and distinguishing it from the developmental breast anomalies is obviously the biggest problem in its management. It is virtually always unilateral, hard, generally nontender, and may not be immediately beneath the areola. Each of these characteristics may serve to separate it from prepubertal breast development.

Despite the need to avoid operating on young breasts, when faced with a slowly growing, hard unilateral breast mass in a young child, open excisional biopsy with frozen section appears to be the best approach.

References

1. Bower, R.; Martin, J. B. and Ternberg, J. L.: Management of breast lesions in children and adolescents. *J. Pediatr. Surg.* 11:337-346, 1976.
2. Daniel, W. A., Jr., and Mathews, M. D.: Tumors of the breast in adolescent females. *Pediatrics* 41:743-749, 1968.
3. Ashikari, R.; Farrow, J. H. and O'Hara, J.: Fibroadenomas in the breast of juveniles. *Surg. Gynecol. Obstet.* 132:259-262, 1971.
4. Seashore, J. H.: Breast enlargements in infants and children. *Pediatr. Ann.* 4:542-564, 1975.
5. Kern, W. H. and Clark, R. W.: Retrogression of fibroadenomas of the breast. *Am. J. Surg.* 126:59-62, 1973.
6. Bannayan, G. A. and Hajdu, S. I.: Gynecomastia: Clinicopathologic study of 351 cases. *Am. J. Clin. Pathol.* 57:431-437, 1972.
7. Amerson, J. R.: Cystosarcoma phyllodes in adolescent females. *Ann. Surg.* 171:849-858, 1970.
8. McDivitt, R. W.; Urban, J. A. and Farrow, J. H.: Cystosarcoma phyllodes. *Johns Hopkins Med. J.* 120:33-45, 1967.
9. Hoover, H. C.; Trestorenau, A. and Ketcham, A. S.: Metastatic cystosarcoma phyllodes in an adolescent girl: An unusually malignant tumor. *Ann. Surg.* 181:279-282, 1975.
10. Ramirez, G. and Ansfield, F. J.: Carcinoma of the breast in children. *Arch. Surg.* 96:222-225, 1968.
11. Birks, D. M.; Crawford, G. M.; Ellison, L. G. and Johnstone, F. R. C.: Carcinoma of the breast in women 30 years of age or less. *Surg. Gynecol. Obstet.* 137:21-25, 1973.
12. Oberman, H. A. and Stephens, P. J.: Carcinoma of the breast in childhood. *Cancer* 30:470-474, 1972.
13. McDivitt, R. W. and Stewart, F. W.: Breast carcinoma in children. *JAMA* 195:388-390, 1966.

Neural Tube Defects*

Seasonal and Regional Variations in Kansas

ALAN E. ORGAN, M.D., Ph.D.;† LILLIAN GONZALEZ-PARDO, M.D.† and
KAY VATH, R.N., M.S.,‡ *Kansas City, Kansas and Topeka*

SEASONAL VARIATIONS of central nervous system (CNS) malformations have previously been recognized.¹ Two malformations of the CNS which manifest a seasonal pattern with an identifiable rhythm are anencephaly and spina bifida.² The causal basis of the occurrence of neural tube defects is not firmly established; however, related exogenous factors appear to be variability of incidence in different parts of the world, differences between ethnic or racial groups, seasonal variations, and other factors such as effects of migration and diet.³

In 1974, the estimated incidence of neural tube defects in Kansas was 5/10,000 live births.⁴ In August 1978, an unusual clustering of five new cases of neural tube defects over a four-week period was seen at the University of Kansas Medical Center. The purpose of this paper is to report these cases and to determine if an exogenous factor or factors can be identified to explain this rather high occurrence within a brief period of time.

Methods and Materials

The case histories of five infants admitted to the University of Kansas Medical Center during August 1-27, 1978, were reviewed. To compare this data with previous reports, statistics compiled by the Kansas State Department of Health and Environment of cases of neural tube defects both in live births and still births were studied. These data were obtained from birth certificates submitted to the state Department of Vital Statistics, and distribution of these cases by county was compiled.

Case Reports

Case One was a one-day-old white male born August 1, 1978, in Manhattan, with an open

myelomeningocele. He was born by Cesarean section because of breech presentation at 39 weeks gestation. Birth weight was 3,380 gm. APGARs were reported as 8 and 9 at one and five minutes. He was transferred to the University of Kansas Medical

A seasonal variation of reported cases of neural tube defects in the state of Kansas was found to occur; a regional concentration was also noted during a 20-month period. Five cases are presented in detail. More studies are suggested to evaluate environmental factors that are possibly contributing to these seasonal and regional differences.

Center at one day of age. Physical examination revealed a head circumference of 37 cm (75th percentile). The posterior, anterior and intermediate fontanelles were open, and the anterior fontanelle was 1-1½ cm x 1-1½ cm and bulging. Heart, chest, abdomen, and external genitalia were normal. Examination of the back revealed a 4-5 cm long and 3-4 cm wide open myelomeningocele — apparently draining cerebrospinal fluid — at the level of the second to fourth lumbar vertebrae. There was a tuft of dark hair just above the coccyx. Examination revealed the upper extremities to be grossly normal, but the lower extremities were very flaccid with no reflexes. There was severe *talipes equinovarus* bilaterally, the left being worse than the right, and the right femur was felt to be fractured — possibly related to the birth process. Neurological examination revealed good suck and grasp reflexes and good muscle tone in the upper extremities. There was fair head control and back extension. Sensory examination revealed a response to the level of T-10 and above on the right and T-11 to 12 and above on the left. There was no response below these levels. The anal sphincter tone was flaccid.

Nafcillin and gentamicin therapy was started, and the patient was taken to surgery on the second hospital day for closure of the myelomeningocele. Several hours later the nurses noted blood in his urine.

* The term *neural tube defects* is used to include anencephaly, spina bifida cystica (meningocele, meningomyelocele), and all types of encephalocele.

† Department of Pediatrics, University of Kansas School of Medicine, Kansas City, Kansas.

‡ Kansas Crippled Children's Program, Bureau of Maternal and Child Health, Department of Health and Environment, Topeka, Kansas.

Urinalysis showed a few red blood cells and cellular casts. Systolic blood pressure was around 90 mm Hg but reported at 50 mm Hg during surgery. Estimated blood loss of 107 cc was replaced with 100 cc packed red blood cells during surgery. The initial impression was that the child had suffered a transfusion reaction. He was hydrated and feeding was increased; phototherapy was started because the bilirubin rose to 11.1 mg/dl. He recovered from the transfusion reaction, but head circumference began to increase and computerized tomography (CT) head scan showed moderate ventricular dilatation. On the ninth hospital day, a ventriculo-peritoneal shunt was placed. The fractured right femur was braced but not casted. He was discharged 18 days after admission in good condition.

Case Two was a 3,207-gm white male born August 1, 1978, in Topeka to a gravida 1, para 1, 25-year-old mother. Gestation was 40 weeks by dates; vaginal delivery was normal. The APGAR scores were 1 at one minute and 3 at five minutes, which required resuscitation. At birth the physical examination revealed a Grade II/VI murmur at the left sternal border, tachypnea, and a large occipital encephalocele. The child was immediately transferred to the Medical Center, and on admission the physical examination revealed a heart rate of 140 beats/min and respiratory rate of 40/min on the ventilator. He exhibited a slanting forehead and a large encephalocele in the cervical area which transilluminated. Back and spine were grossly normal. The chest demonstrated decreased breath sounds on the right side. Cardiovascular examination revealed an intermittent Grade I/VI systolic murmur at the left sternal border. The extremities revealed pulses of 2+/4+ in the arms and 1+/4+ in the femorals, without clubbing, edema, or cyanosis. Neurological examination revealed decreased muscle tone in all four extremities with spontaneous activity; deep tendon reflexes were decreased. The cranial nerves showed right central facial weakness, mild atrophy of the right side of the tongue, and vocal cord paralysis.

A chest x-ray on admission revealed 100-per cent pneumothorax on the right side, pneumomediastinum, and a non-displaced fracture of the left clavicle. Skull films showed lacunar skull deformity and a 4 x 5 cm posterior encephalocele. A chest tube was inserted on the right side which alleviated the right pneumothorax. The right pneumomediastinum persisted. Cerebral arteriography was performed which revealed no abnormalities in the right vertebral artery. A prominent occipital artery, which arose from the external carotid artery, was noted to be supplying

blood to the skin of the encephalocele. The encephalocele was essentially felt to be avascular and mainly cystic in nature. A CT head scan showed ventricular enlargement indicating hydrocephalus. The encephalocele was surgically repaired on the third hospital day. Throughout the hospital course, the infant exhibited respiratory stridor and apneic spells requiring endotracheal intubation and mechanical ventilation. A ventriculo-peritoneal shunt was placed because of increasing hydrocephalus and deteriorating clinical course. However, he did not improve; gag and corneal reflexes ceased; he developed cortical posturing of the left hand; and he died on the 30th hospital day. At autopsy, the pertinent findings on examination of the brain were marked ventricular enlargement, cerebellar agenesis, and developmental anomalies of the lower cranial nerve as it arose from the brain stem.

Case Three was a one-day-old white female born August 3, 1978, to a 19-year-old gravida 1, para 1 mother by spontaneous vaginal delivery. There were no complications during pregnancy, labor, or delivery. Birth weight was 3,448 gm. APGARs were 7 and 8 at one and five minutes respectively. A lumbar myelomeningocele was noted at birth, the defect was dressed with sterile dressing, and the infant was transferred from Coffeyville to the Medical Center for surgical repair. On admission, the physical examination revealed normal vital signs. The sutures were widely open and the anterior fontanelle soft; the occipital-frontal circumference was 35 cm (50th percentile). Neck, chest, heart, abdomen, external genitalia, and extremities were normal; there was good movement of all four extremities. Examination of the back revealed a large 5 x 5 cm mass in the lumbo-sacral region of the spine. Skin was present 1-1½ cm up from the base; the remainder of the lesion was covered by meninges with cerebrospinal fluid leak in the midline. The myelomeningocele sac appeared to be filled with fluid, and was located approximately at the L5-S1 level of the vertebral column. Neurological examination revealed the cranial nerves to be intact. Patellar reflexes were normally active and symmetrical; ankle reflexes were not present. She had good grasp; rooting and Moro reflexes were present. Pain sensation appeared to be intact in both lower extremities with questionable absence of sensation in the solar aspects of the feet. Plantar flexion was not demonstrated, and there was no anal sphincter tone.

A regimen of nafcillin and gentamicin was prescribed, and the infant was taken to surgery for closure of the myelomeningocele sac on the first hospital day. She did well postoperatively, but head

circumference began to increase and hydrocephalus developed as documented by a CT head scan. On the sixth hospital day, a ventriculo-peritoneal shunt was placed without complications. The child progressed well, and was discharged 15 days after admission.

Case Four was a 14-hour-old white male from Fort Scott who was transferred to the Medical Center because of a lumbar myelomeningocele. He was born at 38 weeks gestation to a 19-year-old gravida 2, para 2, aborta 0 mother on August 3, 1978, weighing 3,200 gm; vaginal delivery was normal. APGAR scores were 8 and 9 at one and five minutes. On admission physical examination showed vital signs to be normal, and general physical examination was unremarkable except for bilateral *talipes equinovarus* and open myelomeningocele at the level of first to fifth lumbar vertebrae. The occipito-frontal circumference was 33 cm (2nd percentile) and the anterior fontanelle was flat. Neurological examination revealed good suck reflex, asymmetrical Moro reflex, good sensation in the left lower extremity with spontaneous movement, and no spontaneous movement of the right leg. There was no sensation in the right leg below the level of first lumbar segment.

Skull x-rays revealed lacunar skull deformity. The open lumbar defect was closed with a split-thickness skin graft. Nafcillin and gentamicin were administered, and the patient did well postoperatively. Subsequent culture of staphylococcus aureus from the lumbar lesion led to continued use of intravenous antibiotics for ten days. A CT head scan done on the sixth hospital day revealed markedly enlarged ventricles, indicating hydrocephalus. The following day a ventriculo-peritoneal shunt was placed; the patient tolerated the procedure well. Prior to discharge on the 16th hospital day, the patient's club feet deformities were casted.

Case Five was a 3,544-gm white female born August 27, 1978, in Topeka, to a gravida 3, para 3, aborta 0, 28-year-old white mother at 40 gestational weeks. APGAR scores were reported as 5 and 5 at one and five minutes. The infant was cyanotic at birth and required endotracheal intubation. Respiratory stridor was present at birth, and the infant was transferred to the Medical Center. Pertinent findings on admission included intermittent left esotropia, and the back and spine showed a 4-cm-diameter open lesion of the sacral area covered with a membrane that was confluent with the surface of the skin. Neurological examination revealed normal palmar and plantar grasp reflexes, and Moro reflexes were also normal. There was response to pain in all extremities; anal sphincter tone was normal.

The myelomeningocele was surgically repaired without complication on the third hospital day. Neurologic sequelae included a hypotonic bladder requiring Crede's maneuver. The patient was treated twice for possible sepsis, although no positive cultures were obtained. A CT head scan showed mild ventricular dilatation but no progression was revealed by repeat examinations. A ventriculo-peritoneal shunt was not placed. On laryngoscopy, the vocal cords appeared not to move well. On two different occasions of extubation for short periods of time she was able to ventilate herself. However, a gradually progressive audible inspiratory stridor that resulted in retraction of the sternum necessitated reintubation. This was subsequently managed with a tracheostomy done on the 17th hospital day. She developed seizure-like activity characterized by hypertonic posturing and staring gaze, followed by purposeless, wandering movements of upper extremities and rotation of the head. Apneic spells were associated with these episodes. Phenobarbital anticonvulsant therapy was initiated, and theophylline was administered as a respiratory stimulant. The patient responded well to both therapies, and was discharged 37 days after admission with phenobarbital for seizure control. At the time of discharge, instructions were given to the parents for tracheostomy and bladder care. She was in fair condition when she went home.

Maternal Histories

The average age of the mothers of these five patients was 24 years (range, 19-30 years). All except one had normal vaginal delivery, three at 40 weeks gestational age, 2 at 38 and 39 weeks. Two were prima gravidas, two were gravida 3 and one was gravida 2. There were no previous siblings with neural tube defects. One mother had a cousin born with spina bifida; otherwise there were no significant birth defects in first degree relatives.

The diet of the mothers during the prenatal period was essentially unremarkable. There was no unusual intake of potatoes. The ancestry was not consistent with any particular ethnic group; none were of British or Scottish origin. None of the mothers migrated from other communities after conception.

There was no apparent viral or flu-like illness or epidemic known to the mothers at the time of their conception. Except for vaginal spotting during the second month by one mother, the prenatal histories were essentially unremarkable.

Monthly Reports in Kansas

Data compiled by the Kansas State Department of Health and Environment on neural tube defects dur-

TABLE I
NEURAL TUBE DEFECTS
Cases Reported in Livebirths and Stillbirths

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(1977)												
Livebirths	1	0	0	0	1	1	0	1	4	0	0	5
Stillbirths	1	2	3	0	0	1	0	1	1	1	1	1
(1978)												
Livebirths	2	1	3	1	1	0	0	5	NA	NA	NA	NA
Stillbirths	0	0	1	1	2	2	1	5	NA	NA	NA	NA

NA — Not available.

ing 1977 and 1978 are shown in *Table I*. In August 1978, the number of cases reported in live births and still births outnumbered previous monthly reports from different counties in the state.

The geographical distribution of all cases of neural tube defects in the different counties during the 20-month period showed nine cases from Sedgwick, four from Wyandotte, three from Shawnee and two each from Cloud, Crawford, Geary, Jackson, McPherson, Saline, and Trego counties. One case each was reported from Barber, Coffey, Comanche, Cowley, Douglas, Labette, Marshall, Montgomery, Rice, Riley, Seward, and Wichita counties.

Discussion

The cause of neural tube malformations remains obscure; however, the consensus is that they result from the action of environmental factors on a genetically predisposed individual.

The natural incidence of neural tube defects varies considerably in different parts of the world, from a range of 3/10,000 births in Japan to over 40/10,000 births in some parts of the British Isles.³ Earlier studies from the British Isles showed important regional variations; the higher incidence in South Wales and Dublin contrasted with low incidence in East Anglia and Birmingham.⁵

Naggan and MacMahon⁶ reported on the incidence of neural tube defects in Boston as higher for Irish-born mothers than in second and third generation Irish mothers born in the United States. The authors postulate that such a fall in incidence after migration cannot be explained in genetic terms.

Aylett *et al.* confirmed a clustering of 18 infants born with neural tube defects in 979 births over five years in a small Welsh town.⁷ There was no evidence that the cases in the group were offspring of intermarriages and genetic or ethnic factors were ruled out. Their speculation favored the real possibility of

some unrecognized environmental factor that caused the spatial clustering of neural tube defects.

Sandahl⁸ in Sweden noted the seasonal incidence of neural tube defects which showed peak incidence for infants conceived during the spring months (February-April) for anencephaly and a July peak for spina bifida. The differences in peak months suggested variations in malformation risk during different parts of the year.

Data collected in this report suggest both a seasonal and a regional variation. Although the period of data collection was brief, it shows two peak months — December 1977 and August 1978 (6 and 10 total cases of neural tube defects respectively). We are unable to review all of these cases in detail, but of the five cases detailed in this report it was possible to ascertain the month of conception occurring in late fall of the preceding year. These five cases come from four different regions of the eastern part of Kansas, and no known viral illness was prevalent during that time. Maternal age, parity, diet, and ancestry and migration patterns did not suggest any significant contributing factors.

The clustering of cases in Sedgwick County was somewhat surprising. Although Sedgwick County is highest in county population, there were no distinct religious or ethnic groups that settled in this urban-industrial community. Only two adjoining counties north of Sedgwick have two cases from each county. Topographically, a small river (Little Arkansas River) transects these three counties north to south. U.S. Highway 81 — which also transects these three counties — is not as well traveled as other interstate routes. Sedgwick County, however, has four companies manufacturing airplanes and their parts in that area. The exact influence or effects of these industrial plants on the incidence of malformation in general are not known.

(Continued on page 164)

Risk Birth Registry

Results of a Pilot Study in Kansas

GRACE E. HOLMES, M.D.;* DENISE BRANNAN COLE, R.N., B.S.N.;†
BETTY W. TALIAFERRO, R.N., B.S., M.A.,‡ and
JEANETTE L. DOWNS,§ *Kansas City, Kansas*

FALLING PERINATAL mortality and morbidity rates in the United States over the past 20 years are encouraging. However, the incidence of less severe syndromes of brain dysfunction may be increasing in the very population of infants who previously did not survive. With the emergence of infant stimulation and intervention programs available to babies with subsequent developmental disabilities, there is increased urgency to screen and identify these high risk children as soon as possible, particularly in line with the mandate of Public Law 94-142.¹

Risk registers have been utilized in England for various conditions of health including that of the high risk infant. In the early 1960s, a plan to initiate and maintain registers of "at risk" infants in Great Britain was approved by the Ministry of Health and was widely adopted. Plans were made to follow each child who was at risk for a period of several years in order to determine the presence or absence of evidence of any disability.^{2,3} However, in 1967, the plan was carefully examined by Oppé,⁴ and several criticisms and suggested revisions were made. One of the major criticisms of the register by most of the health care workers was that all infants and young children deserved careful follow-up regardless of risk factors.

There can be little argument with this suggestion. However, until all family physicians, pediatricians, and other health care workers routinely look for signs of atypical development in all infants and young children who are seen by them, it may be necessary to utilize a more methodical plan to label babies at risk. Earlier referral to infant stimulation programs

ideally would follow the earlier diagnosis of such children.

In October 1975, two Kansas counties — Wyandotte and Johnson — embarked on a pilot project, the Risk Birth Registry, which was designated a Medical

A pilot study utilizing a Risk Birth Registry was initiated in October 1975, by the Wyandotte and Johnson County Health Departments to identify and benefit high risk newborns. Final results of the completed pilot study — covering approximately two years — are critically examined and discussed, and recommendations for improvement and further study are given.

Research Study under the Confidentiality Law (GS 65-177-65-179, 1961 Supplement). This registry had two goals — the identification of the high risk newborn and the subsequent dissemination of intervention program information which might benefit such infants.

We report here on the results of the completed pilot study as a follow-up to the first-year results reported earlier by Holmes.⁵

Method and Material

Four risk criteria based on previous work by Holmes⁵ were used: (1) gestational age of less than 37 weeks; (2) birth weight of 2,500 gms or less; (3) respiratory difficulty in the immediate postnatal period; and (4) congenital anomalies. Information regarding these four criteria is available from the basic birth certificate of the state of Kansas and the supplemental medical section. Babies without these criteria were matched according to sex, age, and race and served as a control group. Correspondence with parents and the child's physician provided the follow-up data. When appropriate, information on stimulation programs was shared with the physician who was asked to share it with the parents. The plan required close cooperation between the county

* Assistant Professor, Departments of Community Health and Pediatrics, University of Kansas School of Medicine, Kansas City, Kansas.

† Nursing Supervisor, Johnson County Health Department, Johnson County, Kansas.

‡ Acting Director of Field Services, Kansas City-Wyandotte County Health Department, Wyandotte County, Kansas.

§ Coordinator, Risk Birth Registry, Wyandotte and Johnson Counties, Kansas.

Address reprint requests to Dr. Holmes, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

health departments and private physicians caring for the babies, and also the willingness on the part of parents to share medical information regarding their children with the county health departments.

Results

It soon became apparent that of the total number of children registered, a large percentage of parents could not be located either by mail or telephone. Reasons for this were reported previously⁵ and did not change throughout the course of the pilot study. Thus, a large number of babies were immediately lost to follow-up study.

Tables I and II summarize the follow-up outcome of the risk and control babies from Wyandotte and Johnson counties, respectively.

It is readily apparent that the number of completed initial contacts of all Wyandotte County babies was less than 20 per cent of all who were registered, and for the registered Johnson County babies less than 40 per cent, resulting in a very high cost/benefit ratio. However, of those babies for whom medical information was available, 36.4 per cent of the Wyandotte County babies in the risk group either had developed subsequent problems or had died as compared to 6 per cent of the control babies. In Johnson County, the results were less striking with a 16.5 per cent incidence of morbidity or mortality among the risk babies on whom medical information was available and 7.9 per cent among the control group.

Thirteen Wyandotte County babies who died in the newborn period — usually within a few hours of

birth — were not matched with controls; 12 of these were premature with low birth weight, 10 had the additional factor of respiratory problems. The remaining child was anencephalic and had low birth weight. Six Johnson County babies who died early were also noted but not registered. All six were premature with low birth weight, three with additional respiratory problems. One child was microcephalic with absence of eyes and nose and two others had multiple congenital anomalies.

Of the 23 registered Wyandotte County risk babies who died, 19 had low birth weight, most often in combination with other factors. Nine had the three risk factors of prematurity, low birth weight and respiratory problems, and another had all four risk factors, the congenital anomaly including hand deformities and low set ears. The nine risk babies who lived but had subsequent problems included six who had low birth weight alone or in combination with other factors; two babies had all the risk factors except for congenital anomaly.

Of the six registered Johnson County risk babies who died, four had low birth weight, usually in combination with other risk factors. One child had all four risk factors, including congenital problems of scoliosis and omphalocele. One child had Trisomy 18 anomaly, while another had absence of the diaphragm and pneumothorax. The nine risk babies with long term problems included six with low birth weight, but none had a combination of more than two risk factors.

Most of the deaths of the registered babies occurred within the first two weeks of life. However,

TABLE I
FOLLOW-UP RESULTS OF "AT RISK" AND
CONTROL BABIES
WYANDOTTE COUNTY
(July 4, 1975-May 23, 1977)

	<i>Risk</i>	<i>Control</i>
Total registered	397*	401
Inactive (unable to contact, moved, not interested)	<u>309</u>	<u>334</u>
Medical information available	88	67
No problems	56	63
± problems	2	1
Problems (child living)	7	2
Child died	23	1
Congenital problem known from birth certificate, but no information available on follow-up	7	—

* Plus 13 who died soon after birth and were not registered or matched with control babies.

TABLE II
FOLLOW-UP RESULTS OF "AT RISK" AND
CONTROL BABIES
JOHNSON COUNTY
(August 6, 1975-March 1, 1978)

	<i>Risk</i>	<i>Control</i>
Total registered	213*	213
Inactive (unable to contact, moved, not interested)	<u>122</u>	<u>137</u>
Medical information available	91	76
No problems	76	70
± problems	2	2
Problems (child living)	7	3
Child died	6	1
Congenital problems known from birth certificate, but no information on follow-up	2	—

* Plus 6 who died soon after birth and were not registered or matched with control babies.

one Wyandotte County death occurred when the child was 10 months old, of unknown causes, following a report of a normal child at 6 months. Another risk child from the same county died of SIDS at 2 months of age; a Johnson County risk baby died at 3½ months of the same syndrome. All three of these babies who died after the neonatal period had low birth weight as the single risk factor that initially resulted in their inclusion in the risk group.

Of babies from the control groups, one death from each county was reported — one of a car accident and the other in a house fire.

Further differentiation of the specific outcome of problems among the living risk and control babies of these two counties is listed in *Tables III* and *IV*.

In reported cases of developmental lag, it was difficult to determine the severity of problems as this was often interpreted differently by different physicians. Thus, problems listed in the different categories may be more or less serious than indicated in *Tables III* and *IV*.

Information regarding the "Count Your Kid In" (CYKI) program was sent to physicians and parents when appropriate. This program was designed by the

TABLE III
DISPOSITION OF BABIES WITH PROBLEMS
Risk Birth Registry — Wyandotte County

	<i>Risk Babies</i>	<i>Control Babies</i>
Medical information received: Problems	<p>W 101 <i>Microcephaly, spasticity, developmental delay at 12 months.</i> Referred to Infant Development Center by private physician. Information on Count Your Kid In sent to parents.</p> <p>W 111 <i>Delayed development at 5 months,</i> persisted. Referred to IDC by private physician. Information on CYKI to parents.</p> <p>W 199 <i>Myelomeningocele</i> — receiving appropriate follow-up care. Information on CYKI, IDC and PACE* program to physician.</p> <p>W 247 <i>Down's Syndrome (Trisomy 21).</i> Referred to IDC by private physician. Information on CYKI to parents.</p> <p>W 361 <i>Cleft lip/palate</i> — receiving appropriate follow-up care. Information on CYKI to parents.</p> <p>W 371 <i>Esotropia, bilateral, severe; hypotonia at 5 months.</i> Surgical intervention for strabismus. Information on IDC, PACE and CYKI to physician.</p> <p>W 495 <i>Delayed development at 19 months.</i> Information on PACE, IDC and CYKI to physician.</p>	<p>W 64 <i>Biliary atresia</i> — received appropriate follow-up care; pre-terminal.</p> <p>W 170 <i>Delayed development; esotropia at 7 months.</i> Information on CYKI and PACE sent to physician (already familiar with IDC).</p>
± Problems	<p>W 69 <i>Macrocephaly at 7 months.</i> Lost to follow-up by private physician and health department.</p> <p>W 195 <i>Failure to thrive at 6 months.</i> Lost to follow-up by private physician and health department.</p>	<p>W 606 <i>Delayed gross motor development at 12 months.</i> Followed through health department.</p>
Congenital problems known from birth certificates. No contact.	<p>W 193 <i>All 4 risk criteria,</i> unknown congenital anomaly. Moved.</p> <p>W 353 <i>Gastroschisis;</i> moved.</p> <p>W 551 <i>Patent ductus arteriosus;</i> no contact.</p> <p>W 593 <i>All 4 risk criteria,</i> multiple congenital anomalies.</p> <p>W 657 <i>Foot defect bilaterally;</i> no contact.</p> <p>W 741 <i>Cleft palate;</i> no contact.</p> <p>W 787 <i>Talipes equino varus;</i> no contact.</p>	

* PACE — Kansas Parent and Child Education Program.

State of Kansas to help with educational planning for children with developmental problems in response to Public Law 94-142. Also shared with physicians and parents was information on two programs for children with developmental problems, the Infant Development Center (IDC) in Shawnee Mission, Kansas, and the Kansas Parent and Child Education Program (PACE) of the Shawnee Mission School District, both of which offered services to residents of Johnson and Wyandotte counties during the time period of this study.

Discussion

For a number of reasons, it became obvious that one — and possibly both — of the goals of the Risk Birth Registry were not being reached. The identifi-

cation of the names of high risk babies via the birth certificates was not difficult, and it would appear from the known problems of the children noted in *Tables III* and *IV* that the risk criteria used were adequate in carefully discriminating risk from control babies — more so in Wyandotte than in Johnson County. However, we could not be certain that we were reviewing the total number of birth certificates since not all of the certificates were immediately available to the county health departments. Also, it was apparent that some congenital anomalies, such as Down's syndrome and microcephaly, were sometimes missed or perhaps the diagnosis deferred by the physician who signed the birth certificate, and therefore were not always recorded.

In addition, the second goal of the Registry,

TABLE IV
DISPOSITION OF BABIES WITH PROBLEMS
Risk Birth Registry — Johnson County

	<i>Risk Babies</i>	<i>Control Babies</i>
Medical information received: Problems	<p>J 43 <i>Congenital hip dislocation, kyphosis, foot deformity.</i> Appropriate follow-up care. Information on CYKI, IDC and PACE* to physician.</p> <p>J 49 <i>Cleft lip/palate</i> — appropriate follow-up care. Information on CYKI, PACE and IDC to physician. Mother offered assistance to help other parents of babies with similar problems.</p> <p>J 99 <i>Seizures, failure to thrive, floppy</i> at 9 months; "cerebral palsy" at 24 months. Institutionalization being considered.</p> <p>J 195 <i>Esotropia, left eye</i> at 18 months. Referred to ophthalmologist by private physician.</p> <p>J 247 <i>Floppy with abnormal movements</i> at 15 months. Information on IDC, PACE and CYKI sent to physician.</p> <p>J 343 <i>Extrophy of bladder</i>; receiving appropriate follow-up care.</p> <p>J 425 <i>Down's syndrome.</i> Doing well at 9 months; periodic developmental evaluation through Health Department.</p>	<p>J 56 <i>Developmental delay and esotropia</i> at 12 months. Information on CYKI, IDC and PACE to physician.</p> <p>J 244 <i>Esotropia, left eye</i> at 10 months. Referred to ophthalmologist by private physician.</p> <p>J 288 <i>Developmental delay</i> at 10 months. Information on CYKI, IDC and PACE to physician.</p>
Problems	<p>J 253 <i>Mild gross motor delay; strabismus</i> at 12 months. Doing well.</p> <p>J 347 <i>Mild developmental delay; some exophoria</i> at 13 months. Doing well.</p>	<p>J 224 <i>Congenital ptosis; possible developmental lag</i> at 20 months. Private physician follow-up.</p> <p>J 300 <i>Poor weight gain</i> at 12 months. Private physician follow-up.</p>
±		
Congenital problems known from birth certificate. No contact.	<p>J 69 <i>Genu recurvatum</i>; moved.</p> <p>J 167 <i>Myelomeningocele</i>; unable to contact through Health Department home visit. Information on IDC, PACE and CYKI to parents.</p>	

* CYKI — Count Your Kid In; IDC — Infant Development Center; PACE — Kansas Parent and Child Education Program.

namely that of benefiting the high risk newborn, was not being realized to our satisfaction. Some of the drawbacks included: (1) lack of initial contact with parents; (2) too remote an involvement with the parents since the communication with them basically was to explain the Registry and obtain their signatures on the information release form; (3) the developmental ability of the child was not always measured or reported on follow-up pediatric visits, resulting in a long delay in determining the presence or absence of developmental problems in the infants; and (4) the incidence of referrals by physicians to stimulation programs could not be determined in spite of sharing information on programs with them.

Because of these inadequacies, it seemed wise to reevaluate this method of identification and follow-up, and try to achieve the same goals by more efficient and effective means.

It was determined that an attempt should be made to establish direct contact with parents of newborns as early as possible in the neonatal period. Use of a questionnaire completed by new mothers to obtain data on specific high risk problems has been used elsewhere.⁶ Completion of such a form by parents allows them to state whether or not they feel a problem exists, rather than informing them by letter of problems, some of which they may have been unaware of. Completion of the form by parents also allows the health department to obtain a current home telephone number or one at which the family can be reached.

In addition to an early contact with the parents, it is recommended that any high risk program include continuing contact with those parents who require special support. More expeditious dissemination of information to the parents regarding appropriate programs in the community is also advisable. Frequently, physicians are unaware of available community programs, particularly in the realm of developmental disabilities.

As a result of this critical assessment of the Risk Birth Registry and the associated recommendations, a new approach to methodical identification of the high risk newborn has been instituted by the Johnson County Health Department utilizing a questionnaire completed by new parents. Comparative evaluation of this method is now in progress and will be re-

ported. Preliminary review indicates that it may prove to be a more beneficial and efficient approach in achieving the stated goals of the Risk Birth Registry than was the original program. It may constitute a new source of contact with the population served by the county health departments without encroaching on the physician/patient relationship.

Thus, while there have been problems as noted with the growth and development of this pilot project, the follow-up has provided useful data that has been utilized in planning a simpler, less costly, yet more effective and practical risk birth program — one that can be more readily adopted by individual county health departments.

Acknowledgements

Bernice Sullivan, R.N., B.S.N., Director, Johnson County Health Department; Martha Hutcheson, R.N., M.P.H., Director of Personal Health Services, Johnson County Health Department; and Darrell Newkirk, M.D., Health Director, Kansas City-Wyandotte County Health Department, Wyandotte County, assisted with research in their respective health departments.

Approval for this pilot study was given by the Bureau of Maternal and Child Health, Kansas State Department of Health and Environment.

Financial assistance was provided by the Johnson County Mental Retardation Center, the Community Concerns Committee of the Village United Presbyterian Church, Prairie Village, Kansas, and the National Foundation — March of Dimes of the Greater Kansas City Area.

References

1. The Education for All Handicapped Children Act of 1975. P.L. 94-142; 20 U.S.C. 1401 et seq; *Federal Register* 42 (163):42474-42518, August 23, 1977.
2. Linton, R. L.: Risk register. *Cereb. Palsy Bull.* 3:481, 1961.
3. Sheridan, M. D.: Infants at risk of handicapping conditions. *Monthly Bull. Minist. Health (London)* 21:238, 1962.
4. Oppé, T. E.: Risk registers for babies. *Dev. Med. Child Neurol.* 9:13-21, 1967.
5. Holmes, G. E.: Toward earlier care. Developing and implementing a High Risk Birth Registry. *J. Kansas Med. Soc.* 78:239-243, 1977.
6. Newborn Hearing Screening Questionnaire. (SDH-BSHS-10-3/76) Speech Pathology/Audiology Section, Utah State Division of Health, Salt Lake City, Utah, March 1976.



Current COMMENT

Rational Use of Aspirin and Nonsteroidal Anti-inflammatory Drugs in Inflammatory Arthritis

R. O. DAY, M.B., B.S.* and H. B. LINDSLEY, M.D.,† *Kansas City, Kansas*

NONSTEROIDAL anti-inflammatory drugs (NSAIDs) include aspirin and aspirin-like compounds; these exhibit reversible anti-inflammatory and analgesic properties useful in the treatment of inflammatory arthritis (IA), *e.g.*, rheumatoid arthritis. Rest and physical therapy are also necessary to achieve maximum suppression of inflammation. Suppression of synovial inflammation will not only reduce the pain and stiffness associated with synovitis but also may prevent some of the long-term accompaniments of IA, such as articular deformities and ankylosis. However, none of these drugs will reverse structural joint damage, such as loss of cartilage or bone.

Assessment of synovitis intensity provides a guide to efficacy of therapy (*Table I*). Often a reliable guide is simply asking the patient how he is feeling and functioning.

Aspirin

Should aspirin remain the first NSAID one uses in IA? Most, but not all, rheumatologists believe so. Despite a higher incidence of adverse effects, particularly gastric intolerance, aspirin is at least as effective as any of the multitude of newer compounds (*Table II*). It is worth noting that claims for anti-inflammatory potency comparable to aspirin

frequently have been unfair to aspirin. This is because fixed doses of aspirin around 4 gm/day have been used for these comparisons. A number of studies have clearly shown that many IA patients will not achieve effective anti-inflammatory levels (15-30 mg/dl) of salicylic acid given such a dosage. A fair comparison with aspirin requires individualization of aspirin dosage to achieve effective serum salicylate levels. Another important advantage of aspirin is that exceptionally long experience with the drug has revealed an extremely low incidence of serious short and long term toxicity. Finally, plain aspirin is considerably cheaper than any of its newer competitors (*Table II*).

TABLE I
A GUIDE TO INTENSITY OF SYNOVITIS*

	Least Intense	Moderately Intense	Most Intense
Duration of morning stiffness (hours)	< 1	1- 3	>3
No. of clinically active peripheral joints†	< 9	9-24	>24
Grip strength (mm Hg)			
male	>160	160-90	<90
female	>127	127-73	<73
ESR (Westergren)	< 28	28-57	>57

* Derived from reference 5.

† Definition of clinical activity: pain or tenderness on passive movement, or swelling (except bony overgrowth).

From the Department of Medicine, University of Kansas School of Medicine, Kansas City, Kansas.

* Fellow in Clinical Pharmacology supported by the National Health and Medical Research Council of Australia.

† Assistant Professor of Medicine.

Address reprint requests to Dr. Lindsley, Department of Medicine, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

TABLE II
NSAID FOR ANTI-INFLAMMATORY THERAPY

Group	Drug	Mean Half-Time of Elimination (hrs) ²	Daily Dose Range (mg)	# of Doses Per Day	Strengths Available (mg)	Cost/Tablet (Cents) ³	Approximate Cost Per Day (Cents) ⁴
Salicylate ¹	plain aspirin (Aspirin)	2.5-20 (salicylic acid)	2400-6000	3-4	325	1	18
	salsalate (Disalcid)	2.5-20 (salicylic acid)	2400-4500 (salicylic acid)	2-3 (salicylic acid)	500	7	59
	choline magnesium trisalicylate (Trilisate)	2.5-20 (salicylic acid)	2400-4500 (salicylic acid)	2-3	500	8	72
	ibuprofen (Motrin)	2 (initial) > 5 (terminal)	1600-2400	3-4	300 400	9 11	65
	naproxen (Naprosyn)	14	500- 750	2	250	19	58
Non toxic NSAID	fenoprofen (Nalfon)	3 (initial) ? (terminal)	1200-3200	3-4	300 600	7 15	75
	tolmetin (Tolectin)	1 (initial) ? (terminal)	1200-1600	3-4	200	9	74
	sulindac (Clinoril)	3 (initial) ⁶ 18 (terminal) ⁶	300- 400	2	150 200	22 ⁵ 28 ⁵	56
	indomethacin (Indocin)	1-2 (initial) 9 (terminal)	50- 150 ⁷	3-4	25 50	10 17	62
Relatively toxic NSAID	phenylbutazone (Butazolidin)	72 (very variable)	100- 400 ⁷	1-2	100	6	22

1. Other salicylate preparations not included.

2. Relevant half-life of elimination is probably the terminal half-life as this most closely reflects synovial fluid drug levels.

3. Cost per tablet to KU Medical School Pharmacy, November 1978 to nearest cent.

4. Cost comparison is based on maximum recommended daily anti-inflammatory dose.

5. Not available in KU pharmacy, December 1978.

6. Refers only to the active anti-inflammatory form, sulindac sulfide.

7. Higher doses often used in acute gout.

Relevant pharmacokinetics. Aspirin or acetyl-salicylate is quickly hydrolysed in blood to salicylic acid, which is the major anti-inflammatory principle in aspirin. The liver's capacity to metabolize salicylic acid is saturated for a short time by single, low doses of aspirin (two or three tablets). Higher doses result in a dose-dependent increase in the half-life of elimination of salicylic acid. Thus the serum half-life of elimination of salicylic acid after a single dose of 0.3 gm of aspirin is about 2.5 hours; however, the half-life approaches 18-20 hours when 5 gm/day of aspirin is taken chronically (at least 5 days duration). This means that the drug can be given on a six- or eight-hour schedule when given in large amounts. It should be remembered that a consequence of the long salicylic acid half-life in high-

dose therapy is that it takes three to four days for the serum salicylate levels to plateau. Therefore, serum salicylate levels should not be drawn until at least three days after commencing high-dose therapy; then, it is best to draw the level in the morning, before the first dose of the day. Another consequence observed clinically is that small increments in dosage can lead to more than proportionate increases in steady-state serum salicylate levels. For example, addition of one or two extra aspirin tablets/day for a patient with a steady-state serum salicylate of 25 mg/dl may increase the serum salicylate level up to or above the toxic level of 30 mg/dl.

Dosage. An effective dose of aspirin in IA is that dose which adequately suppresses the synovitis. Clinically it appears that a serum salicylate level

of 15-30 mg/dl is required for optimal anti-inflammatory activity. This is easily and cheaply measured. Alternatively, some practitioners advocate increasing the dose of salicylate until tinnitus develops, then reducing the dose by one or two tablets/day. If this method is used, it is wise to check the serum salicylate at least once; although tinnitus occurs at a mean serum salicylate level of 30 mg/dl, a number of patients will have salicylate levels in the toxic range when tinnitus develops. This is particularly the case in patients with pre-existing hearing loss (which is surprisingly common in the elderly) and in very young patients. Occasionally patients will develop tinnitus when serum salicylate levels are less than therapeutic. Interestingly, salicylate levels of greater than 15 mg/dl induce uricosuria, and the serum urate will be less than 2.5 mg/dl. Conversely, salicylate levels below 5 mg/dl are anti-uricosuric and often produce hyperuricemia (*i.e.*, serum urate >7.0 mg/dl).

It is an unfortunate fact that an appreciable number of patients with rheumatoid arthritis commenced on high-dose therapy — such as 16 regular aspirin tablets a day — do not achieve anti-inflammatory levels of salicylate. In some cases, this is because of individual variability in the rate of metabolism of salicylate. Certain categories of patients, however, have been shown to be less likely to develop anti-inflammatory levels of salicylate. These include patients with severe RA (particularly males), patients concurrently taking corticosteroid, and patients with alkaline urine usually due to heavy antacid intake.

Plain aspirin. The major adverse effect of aspirin is gastrointestinal intolerance and occult bleeding. The various formulations available have been designed to reduce this effect while not impairing the bioavailability of salicylic acid. It is advisable to use the regular aspirin first, as most patients will tolerate this if given with food or antacids. Aspirin formulations designed to reduce occult bleeding are generally compared to plain aspirin taken whole and on an empty stomach. Once again, this is unfair to plain aspirin, because it is readily absorbed when taken with food, minimizing bleeding and dyspepsia.

Most commercial brands are satisfactorily formulated so that dissolution is prompt on addition to a glass of water (<1-2 min). Studies have shown clearly that administration of aspirin in solution and with sufficient antacid significantly reduces occult gastrointestinal bleeding. If dyspepsia develops, aspirin should be administered in suspension (200 ml water or juice) followed by 30 ml of liquid antacid. Also it should be given with meals.

Buffered aspirin tablets. Formulating aspirin with

antacids causes faster dissolution and absorption of the aspirin in comparison to plain aspirin tablets taken whole. There is not enough antacid present, however, to significantly reduce gastric bleeding.

Effervescent buffered tablets. These are soluble sodium salts of aspirin formulated with a large amount of sodium bicarbonate (*e.g.*, Alka-Selzer). Occult gastrointestinal bleeding is no greater than with placebo. However, these preparations usually are inappropriate for high-dose anti-inflammatory therapy because of their high sodium and bicarbonate content.

Enteric-coated preparations. Recent improvements in the formulation of enteric coatings have produced drugs with acceptable bioavailability of salicylate and significant reduction in occult gastrointestinal bleeding. Onset of absorption is dependent on the rate of gastric emptying, as the pH-sensitive enteric coats do not release their tablet contents until they encounter the neutral to alkaline milieu of the small intestine. For high-dose anti-inflammatory therapy, variation in the rate of gastric emptying should not be a problem given the long half-life of elimination of salicylate. However, it is advisable to check the steady-state serum salicylate level when using these preparations.

Timed-release preparations. There is no advantage in using these preparations for high-dose anti-inflammatory therapy as one cannot improve upon the long half-life of elimination of salicylate from high-dose therapy.

Salsalate (Disalcid), choline magnesium trisalicylate (Trilisate). These preparations are essentially efficient salicylate delivery systems circumventing the problems of occult gastrointestinal bleeding and — probably — dyspepsia. Neither preparation contains any acetylsalicylate, which may explain some of the improved gastrointestinal tolerance. These preparations are much less likely to promote bleeding, as the acetyl radical is responsible for the “antiplatelet” effects of aspirin. Another advantage of these new preparations is that each tablet contains salicylic acid equivalent to approximately two regular aspirin tablets. The indications for these preparations are gastrointestinal intolerance of the simpler salicylate preparations or problems with aspirin-induced platelet dysfunction. Again, serum salicylate measurements are important. Unfortunately, these preparations are as expensive as the newer NSAIDs (*Table II*). Persistin (aspirin 150 mg plus salicylsalicylic acid 500 mg), another similar salicylate preparation, may promote some gastrointestinal bleeding and platelet dysfunction because of the small amount of aspirin contained.

Non-Aspirin NSAIDs

Non-aspirin NSAIDs are generally identified as those aspirin-like drugs that are reversibly short-acting, analgesic, anti-inflammatory, and antipyretic. This excludes the so-called disease suppressant compounds, gold, penicillamine, antimalarials, and levamisole. The mode of action of NSAIDs and also aspirin is not entirely clear but may be related to the inhibition of prostaglandin synthetase, thus limiting the availability of pro-inflammatory prostaglandins.

Non-toxic NSAID. There is little choice among the 5 drugs in this group (*Table II*) with respect to efficacy or toxicity. In general they are all well absorbed — either with or without food or antacid — and have a substantially lower incidence of gastrointestinal adverse effects than aspirin. Sulindac is novel because it is inactive until metabolized, to sulindac sulfide. A twice-daily dosage schedule is a major advantage for naproxen and sulindac. Naproxen and sulindac are also the least expensive of this group when comparing approximate daily cost of therapy (*Table II*). Also, naproxen and sulindac may be slightly more potent than the other members of this class. Otherwise one must arbitrarily try to match the right drug with the right patient by trial and error. A fair trial would be 3-4 weeks; this allows time for dosage adjustments either up or down.

Gastrointestinal adverse effects occur in about 10-15 per cent of patients; however, peptic ulceration and major bleeding are very uncommon (<2%). Skin rashes and CNS side effects such as dizziness, headache, and drowsiness may occur in up to 10 per cent of patients. A small number of patients (<4%) will develop edema, and a few, exacerbation of hypertension.

Use of non-toxic NSAID in aspirin allergy. None of these drugs should be used in patients in whom acute asthmatic attacks, urticaria, or rhinitis are precipitated by aspirin or other NSAIDs.

Drug interactions. None of the relatively non-toxic NSAIDs is associated with significant drug interactions with oral anticoagulants or oral hypoglycemic agents. However, all these drugs reduce platelet aggregation by inhibiting prostaglandin synthetase, albeit less so than aspirin. Therefore, concurrent use of the newer NSAIDs with oral anticoagulants should be avoided if possible. Otherwise, careful observation of patients receiving both classes of drugs concomitantly is necessary.

Concurrent use of aspirin and a relatively non-toxic NSAID. Concurrent use of aspirin and a new NSAID is not recommended as there is little good

evidence for increased efficacy of the combination, but there may be an increased incidence of adverse effects. Additionally, plasma levels of the newer NSAIDs are relatively lower (due to protein binding displacement) when large doses of aspirin are given concurrently. Optimal use of a single agent should be the goal when using these drugs.

Relatively toxic NSAID. Included in this group are indomethacin and phenylbutazone which, although potent anti-inflammatory drugs, have a much higher incidence of toxicity than do the newer drugs. Both cause substantial occult gastrointestinal bleeding and discomfort. Indomethacin is associated with a high incidence of adverse CNS effects, including severe morning headaches. Phenylbutazone is notable for hematopoietic toxicity, either agranulocytosis or aplastic anemia, excessive salt and water retention, and a propensity for drug interactions with oral anticoagulants and hypoglycemic agents. It is unusual to have to use either of these drugs for inflammatory arthritis in 1979.

Summary

Aspirin should remain the first choice for therapy of inflammatory arthritis. Careful attention to the method of administration will result in less gastrointestinal intolerance and bleeding, and better patient compliance. The non-toxic NSAIDs should be reserved for those patients who cannot tolerate aspirin. The non-toxic NSAIDs are no more effective than aspirin but are considerably more expensive. Selection of the appropriate non-toxic NSAID remains a matter of trial and error.

Self-Assessment Questions

(One or more answers may be correct.)

1. The following indicate active synovitis:
 - a. positive rheumatoid factor;
 - b. ESR of 30 mm/hr (Westergren);
 - c. morning stiffness of one hour's duration;
 - d. 8 clinically swollen peripheral joints.
2. A 30-year-old, 65-kg mother of two young children presents with a 4-month history of proven, severe rheumatoid arthritis uncontrolled by 16 regular aspirin (325 mg)/day, weekly gold thiomaleate, and one hour of rest/day. Her serum salicylate level was 11.5 mg/dl. You would:
 - a. ask her why she was not taking her medication;
 - b. increase the dose of aspirin to 18 tablets per day and recheck the serum salicylate in 4-5 days;
 - c. increase the dose of aspirin to 18 tablets per

day and recheck the serum salicylate the next day;

- d. increase the dose of aspirin to 18 tablets per day and suggest she take three tablets every four hours;
 - e. try to help her arrange increased daily rest periods.
3. A 60-year-old male with long-standing rheumatoid arthritis adequately controlled with high-dose regular aspirin therapy (18/day) complains of gastric discomfort related to the aspirin. Which of the following would you do and in what order, assuming your initial maneuvers are unsuccessful:
- a. stop aspirin and commence a relatively non-toxic NSAID, *e.g.*, naproxen;
 - b. stop all NSAID and commence low dose prednisone (7.5 mg/day);
 - c. suggest or remind the patient to take the aspirin in suspension followed by a large dose of liquid antacid and to take the aspirin at meal times;
 - d. commence salicylate or choline magnesium trisalicylate;
 - e. commence buffered aspirin.
4. A 58-year-old male with moderately active rheumatoid arthritis of 10 years' duration has been recently placed on warfarin sodium for recurrent episodes of pulmonary embolism. Previously he had been adequately managed on high dose aspirin and maintenance intramuscular gold. You would:
- a. insist he take antacids with the aspirin;
 - b. stop all NSAID therapy;
 - c. replace aspirin with low dose phenylbutazone;
 - d. replace aspirin with an adequate dose of a relatively non-toxic NSAID, *e.g.*, ibuprofen.
5. The following are consistent with effective anti-inflammatory serum salicylate levels in most adult patients:
- a. tinnitus;
 - b. serum urate less than 2.5 mg/dl;
 - c. a daily dosage of at least 16 regular aspirin/day;
 - d. serum salicylate level between 15-30 mg/dl;
 - e. a measurable clinical improvement.

(Answers on page 176)

CEREBRAL PALSY AIDS

Exercising with an automated head stabilizing apparatus has enabled a small group of cerebral palsy patients to virtually eliminate the constant involuntary head movements that often characterize cerebral palsy.

Frederick A. Harris, Ph.D., a neurophysiologist at the University of Washington School of Medicine, Seattle, originator of the apparatus, told the Medical News Section of the Feb. 9 *Journal of the AMA* that the same principle may also enable cerebral palsy patients to gain voluntary control over arm and leg movements.

The device consists of a frame that restrains the shoulders and a manipulator that supports and acts on the head. It was originally developed by Dr. Harris as a passive restraint for holding a patient's head still enough for dental work to be done. The restraint also can allow self-feeding for a cerebral palsy patient with severe head movement problems.

The apparatus was tested on five patients, ranging in age from 7 to 31 years. At the start each exercised for one hour/week, and sessions were extended as strength permitted. After eight months or less of regular training, all five subjects had gained the ability to hold their heads almost completely on center without any mechanical help. Continued practice is necessary to maintain this ability.

His results with the stabilizer were greeted with surprise by his colleagues. One reason for this, Dr. Harris suggests, is that "there is a tendency to give up on cerebral palsy patients," in part due to the long-standing idea that the condition is due to diffuse and irreversible brain damage.

If Dr. Harris' results are borne out in tests with larger numbers of people, they will support the contention that whatever brain damage is involved in cerebral palsy, it is at least partly remediable, the *JAMA* article says.

USE YOUR MEDICAL
LIBRARIES



Ed Note: This is the 12th in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December, 1978 and January and February, 1979.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

"MY MEDICAL ASSISTANT had worked with me for five years before I found out she'd been taking cash from the practice. She was a good, efficient worker and, I thought, a loyal employee. How could she do this to me?"

Most physicians never doubt the trustworthiness of their medical assistants and for good reason. Their employees are honest. But, when physicians discover they are victims of embezzlement, their first reaction is one of disbelief. The facts are, many doctors are easy targets — an embezzler's delight. Surveys done by professional consultants show that money will be embezzled from one out of every five physicians during their practice career.

Why are physicians such easy prey for pilfering employees? A primary reason is indifference to the daily business operation of the practice. Physicians who never bother to run periodic checks on the finances of their practices are all too vulnerable to dishonest employees. Considering the amount of cash that flows through a typical practice each year, it is easy to see how even the most honest employee may be tempted to dip into the till, or how resentment may build in the employee who is not promoted to a higher salary range. "And besides," thinks the employee, "doctors are so wealthy, they won't miss \$20 here or there." In most cases of embezzlement, the employee's crime can go undetected for years while losses can grow to staggering figures.

Insuring Honesty in Your Practice

Unfortunately, even the most careful physician cannot devise a fail-safe system which can totally eliminate embezzlement. For this reason, it is important for the physician to safeguard his/her practice assets with "honesty insurance" or what is known as a fidelity bond. This type of insurance is relatively inexpensive and can reimburse the insured for losses due to fraud or dishonesty. Fidelity bond insurance, of course, will not reimburse for losses due to "honest" errors arising from negligence or incompetence.

The most common fidelity bond insurance covers the entire staff and is known as a "blanket bond." It will cover all employees in the office, regardless of the job they perform. Other bonds are available to cover specific *individuals by name* or a *specific position* in the office. In the latter case, any person who fills that job function in the office is covered.

Although most insurance companies offer fidelity bonds, some individual agents may not be very familiar with various offerings. It is suggested that each physician check with an attorney, accountant, or consultant before purchasing such a bond.

The amount of protection necessary depends on individual philosophy. Some physicians bond for \$2,000-\$3,000 merely as a deterrent value. But, to realistically protect against actual losses, a minimum of \$20,000 worth of coverage may be required. A large group practice or corporation would probably want to insure for a greater amount.

The cost of the bond may vary. Bond insurance is relatively inexpensive if added to the total insurance package. The cost can begin as low as \$50/year for a one-employee practice. Costs would increase by \$10/year for each additional employee.

Some physicians are reluctant to bond their employees, particularly those with many years of service. Employee objections can be alleviated simply by pointing out that bonding is good business practice. An honest assistant should not mind. The as-

(Continued on page 164)

P.L. 94-142

Implications for Physicians

LILLIAN GONZALEZ-PARDO, M.D.;* PEGGY GLAZZARD, Ed.D.† and
SALLY McCOY, Ph.D.,‡ *Kansas City, Kansas*

LEARNING PROBLEMS have become a major health concern. It is estimated that from 10 to 30 per cent of the school population experiences learning problems.¹

As health care providers for children and their families, physicians must familiarize themselves with current approaches to handling learning problems. They must also develop an awareness of how they, as physicians, may become involved in planning for children with special educational needs.

The purpose of this paper is to provide physicians with information about important aspects of Public Law 94-142, The Education for All Handicapped Act, and to emphasize the implications for them. A current model of interdisciplinary team approach in the assessment of learning problems is also presented to enable physicians to develop and initiate evaluation teams in their communities.

Important Aspects for Physicians

P.L. 94-142 went into effect in October 1977; it ensures the right of handicapped children ages 5-18 years to free and appropriate public education.² The role of physicians will vary from state to state, but it has been emphasized that physicians will play a major part in implementing the law.³

The key provisions that relate to physicians are as follows:

1. Equal access to free and appropriate public education for the handicapped (at no cost to parents). This means special education and related services must be provided. A child cannot be denied an education because there is no program available in the school district for a child with that particular handicap.

2. A written Individualized Education Program (IEP) signed by parents, teachers, and special edu-

Public Law 94-142, or *The Education for All Handicapped Act*, ensures the right of handicapped children to free and appropriate public education. The increasing role of physicians in the evaluation of children and the implementation of the law is emphasized in this article. A current model of interdisciplinary team approach in the assessment of learning problems is presented to enable physicians to understand, develop, and initiate appropriate evaluation teams in their communities.

cation representatives will be on file stating short and long term objectives for a student and how these objectives will be measured at the end of a stipulated amount of time.

3. The use of the "least restrictive environment" concept pertains to placing handicapped children into a regular classroom with supportive help whenever possible (a normalization theory).

4. Non-discriminatory testing and multi-faceted assessment for placement is necessary. No one test measure such as an intelligence quotient score may be used alone to place a child into special education.

5. The law requires appropriate diagnostic and evaluation services prior to placement. This means that physicians, physical therapists, occupational therapists, audiologists, or other appropriate personnel may be called upon to help assess a handicapped child before a placement decision is made.

6. A written notice of any change of placement considered for a student must be sent to the parents.

7. The law provides a system of due process hearings whereby parents may contest a school's placement decision concerning their child.

Interdisciplinary School team

The Interdisciplinary School Team of the Children's Rehabilitation Unit/University Affiliated Facility (CRU/UAF) of the University of Kansas

From the Children's Rehabilitation Unit/University Affiliated Facility (CRU/UAF), University of Kansas School of Medicine, Kansas City, Kansas.

* Medical Director, CRU/UAF; Assistant Professor in Pediatrics and Neurology.

† Special Education Coordinator, CRU/UAF.

‡ Assistant Professor of Pediatrics (Psychology), CRU/UAF.

University of Kansas Medical Center
Children's Rehabilitation Unit

SCHOOL TEAM FLOW CHART

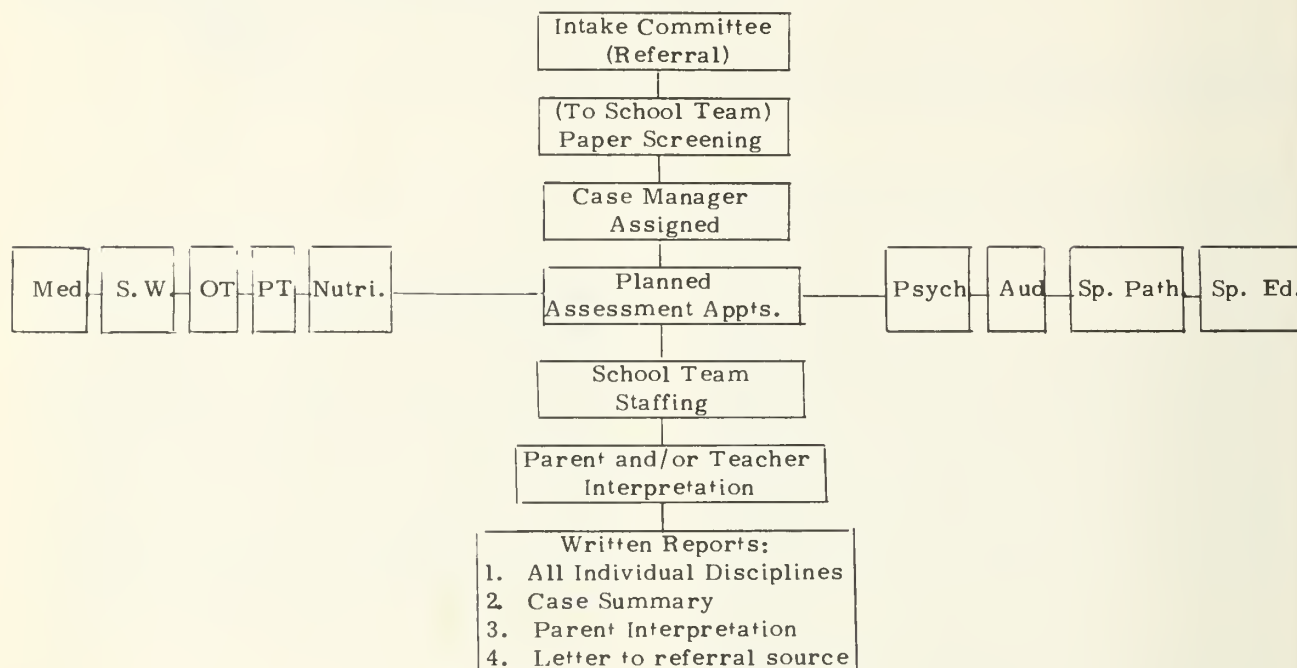


Figure 1

Flow chart and participating disciplines in School Team are:

Med. - Medicine
S.W. - Social Work
O.T. - Occupational Therapy
P.T. - Physical Therapy
Nutri. - Nutrition

Psych. - Psychology
Aud. - Audiology
Sp. Path. - Speech Pathology
Sp. Ed. - Special Education

Medical Center is a multidisciplinary team drawn from the disciplines of pediatrics, psychology, special education, occupational therapy, social work, audiology, speech pathology, and nutrition. Referrals of school-related problems are often initiated by school personnel, physicians, or parents concerned about a child's academic performance, behavioral or emotional problems interfering with school activities. *Figure 1* shows the school team flow chart of cases accepted for evaluation. It is an important prerequisite that the local school district's resources have initially been utilized before the children are referred to the school team to avoid an overlap of services.

An intake committee determines the appropriateness and availability of resources in the unit. A case manager is assigned who is responsible for coordinating the evaluations and serves as a communica-

tion link with the school, parents, and our team. An evaluation checklist (*Figure 2*) is sent out or completed on the basis of previous records. If the needed tests have not been completed, appropriate assessments are planned. The cases are then discussed in weekly team meetings, assessments by the different disciplines are scheduled, and staffing is done. A staffing is a discussion of results of the evaluations and an interdisciplinary decision making of appropriate recommendations. Subsequently, the parents and the school, together or separately, are met in an interpretation conference to present the findings and recommendations.

The interdisciplinary approach provides a multitude of expertise necessary to evaluate the contributing factors that result in school failure for students with multiple problems. The role of each disci-

Evaluation Checklist
University of Kansas Medical Center
Interdisciplinary School Team

Student: _____ Date _____
Birthdate _____ Sex _____ Age _____
School _____ Teacher(s) _____
School Address _____ Principal _____
School Telephone _____ Current Grade Placement _____

Reason for referral _____

Check appropriate boxes:

☐ Achievement Tests: Name of test _____ Score _____ Date _____

☐ Intelligence Tests: Name of test _____ Score _____ Date _____

☐ Adequate Visual Acuity
Does student wear glasses? _____
squint? _____
rub eyes? _____
Vision test _____
Date _____
Results _____

☐ Adequate Hearing Acuity
Does student seem to hear instructions? _____
tilt head to hear better? _____
cup hand around ear? _____
Hearing test _____
Date _____
Results _____

☐ Adequate Physical Health
Please describe: Frequent illness _____
Complaints _____
List specific medical problems _____
medication (s) _____

☐ Test Scores: Name of test _____ Grade level _____
Reading _____ Comprehension _____
Vocabulary _____
Word Analysis _____
Phonics Assessment: has mastery of _____

Language Arts
(spelling, writing, etc.) _____
Math _____
Computation _____
Concepts _____
Problem solving _____

Psychological testing: Test _____ Score: _____

Date Administered: _____

Evaluation Checklist - Page 2

☐ Behavioral Excesses:
What does this student do too often, too much or at the wrong time that gets him into trouble? _____

☐ Behavioral Deficits:
What does this student fail to do as often as you would like? _____

☐ Behavioral Assets:
What does this student do that you like? What does s/he do well? _____

What are your objectives for this child? _____

What attempts have been made by you and your school personnel to alleviate the child's problem? _____

Circle the disciplines involved with this child: Remedial Reading, Counselor, Psychologist, Social Worker, Nurse, Hearing Conservationist, Vision Specialist, L. D. or Resource Teacher
Others: _____

What are your expectations of the KUMC team's evaluation? _____

Comments: _____

Please return to:
School Team
Children's Rehabilitation Unit
University Affiliated Facility
University of Kansas Medical Center
39th and Rainbow Blvd.
Kansas City, Kansas 66103

Figure 2. Evaluation checklist, interdisciplinary school team for children referred for learning problems.

pline varies, with each one contributing toward the total evaluation of children and their families.

Physician's Role

The ideal interdisciplinary team does not exist in many communities. However, children with learning problems are being brought to family physicians and pediatricians with increasing frequency for medical evaluation and recommendations. Parents and schools have the expectation that an organic basis can be ruled out. Unfortunately, clinical measurement tools and reliability studies have only limited ability to eliminate or establish "organicity" of learning problems. The more important functions of the physician are:

1. To identify the children at high risk for learning difficulties; *e.g.*, the child with prenatal or perinatal problems, the child with recurrent ear infections, the abused and neglected child;
2. To diagnose and treat identifiable medical conditions that contribute to learning problems; *i.e.*, visual and hearing defects, motor problems, seizures, malnutrition, and chronic medical problems such as allergies and asthma;

3. To initiate proper referrals and consultations, within medical specialties as well as in fields of audiology, psychology, special education, physical therapy, occupational therapy, and others. The family physician plays a key role in guiding parents to proper sources of help;

4. To initiate or improve communications with schools through telephone, questionnaires, checklists, or direct meetings and conferences;

5. To discover what resources are available in the school district, such as special classrooms and diagnostic services. Other resources include organizations such as Association for Children with Learning Disabilities (ACLD) or National Association for Retarded Citizens (NARC), which have local chapters in most geographic areas. These organizations are parents and professionals who share information about resources and services with members through newsletters and scheduled meetings. Brochures of these organizations should be made available in the physician's waiting room. (INFO: ACLD — 4156 Library Road, Pittsburgh, PA 15234; or NARC — 2709 Avenue E, East; P.O. Box 6109; Arlington, TX 76011);

6. To share with parents information about the new law and services available through the local school district. This increases the parents' awareness of educational and related services to which they are entitled under federal and state codes. It may not be easy in some localities to instigate changes of availability of services, but parents are the greatest advocates for children, and pressure in the community supported by their physicians would hopefully produce rapid changes in public educational systems.

Many physicians consider assessment of learning problems time-consuming and more complex than treating a sore throat or an earache. However, demands for the participation of the physician in learning problems are increasing and will continue to do so. Interdisciplinary team assessments — if not available in the community — must be initiated by physicians because they have traditionally been regarded as leaders in their communities. The physician must rise to this challenge. Short courses in training programs and mini-fellowships in facilities with multidisciplinary expertise are being developed for interested physicians who are willing to take one to two weeks or more from their busy practice to familiarize or update themselves in developing the team approach to these problems.

The pediatric resident physician is now required, in the CRU/UAF program, to spend a six-week rotation in the field of developmental disabilities, learning to participate in multidisciplinary decision making and to share and communicate with other disciplines in the assessment and treatment of handicapped children.

For children to be physically, mentally and intellectually healthy, health providers must advocate for appropriate services and utilize expertise of others in helping children achieve their full or maximum potential.

References

1. Schain, R.: *Neurology of Childhood Learning Disorders*. Baltimore, Williams and Wilkins, 1972.
2. The Education for All Handicapped Act of 1975, PL 94-142. 20 USC. 1401 et reg: *Federal Register* 42 (163): 42474-42518, August 23, 1977.
3. Palfrey, J. S.; Mervis, R. C. and Butler, J. A.: New directions in the evaluation and education of handicapped children. *N. Engl. J. Med.* 298:819-824, 1978.

Neural Tube Defects

(Continued from page 149)

The environmental influence on neural tube defects is not clearly established. Many studies of larger magnitude over longer periods of time in different parts of the world have documented regional and seasonal differences, but the causal or environmental factors have eluded them. A more extensive epidemiologic study is obviously needed to look at genetic and environmental factors that could explain the occurrence of neural tube defects during different parts of the year and in different regions of the state.

References

1. Bailar, J. C. and Gurian, J.: Congenital malformations and seasons of birth: A brief review. *Eugene, Oregon* 12:146, 1965.
2. McKeown, T. and Record, R. C.: Seasonal incidence of congenital malformations of the central nervous system. *Lancet*, 1:192, 1951.
3. Spina Bifida for the Clinician, *Spastis International Medical Publication* (Brocklehurst, G., ed.), Philadelphia, Lippincott and Company, 1976.
4. Annual Summary of Vital Statistics, 1974, Bureau of Registration and Health Statistics, Secretary of Health and Environment.
5. Record, R. J. and McKeown, T.: Congenital malformations of the central nervous system. *Br. J. Socialized Med.* 3:183, 1949.
6. Naggan, L. and MacMahon, B.: Ethnic differences in prevalence of anencephaly and spina bifida in Boston, Massachusetts. *N. Engl. J. Med.* 277:1119, 1971.
7. Aylett, M. J.; Roberts, C. J. and Lloyd, S.: Neural tube defects in a country town. *Br. J. Socialized Med.* 28:177-179, 1974.
8. Sandahl, B.: Seasonal incidence of some congenital malformations in the central nervous system in Sweden, 1965-1972. *Acta Paediatr. Scand.* 66:65-72, 1977.

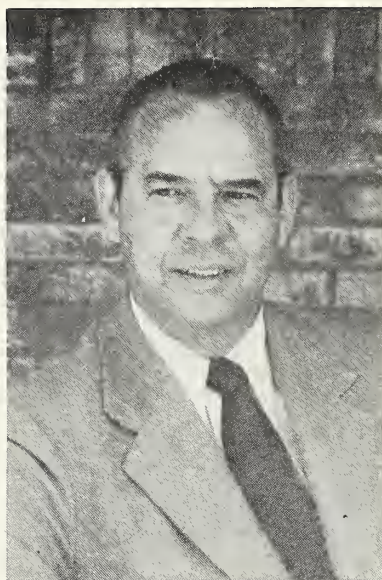
Insuring Honesty

(Continued from page 160)

sistant who objects loudly and refuses to be bonded, however, may be telling the employer something.

The ultimate responsibility of safeguarding his practice rests with the physician. References from all past employers should be checked when hiring a new aide. And beware of the loyal assistant who works late hours, takes work home, or never goes on vacation. Responsibilities should be divided among assistants, so that no one employee has total responsibility for financial transactions. And above all, periodic checks and audits done by the physician are beneficial.

The President's Message



Although my term as President will not end until May, this is the last opportunity I will have to visit with you in print through the medium of the President's Message. It has been an exciting and rewarding year; a year of meeting many wonderful physicians and their spouses throughout the state and learning from them through the visits to the various Council Districts. Thank you for inviting Dot and me and being such gracious and warm hosts.

As we traveled around the state, it was rewarding to see the number of new, young doctors and to be stimulated by their interest and enthusiasm. We have a good Medical Society in Kansas, but it will only remain as good, and as strong, and as effective as you, the individual physician want it to be through your involvement in it!

We must resist the efforts of the many forces that would divide us for their own selfish advantage. The first letters any of us had behind our names were, *M.D.* Others followed denoting areas of special interest, study, and training to better equip us to serve our patients. The main concern we had on entering medicine, and still have today, is to serve our fellow man to the best of our ability through the talents we have. Seeking the best interests of the citizens of Kansas is also one of the stated aims of the Kansas Medical Society. We should be working together toward that end and not allow petty differences to separate us.

I believe the Kansas Medical Society must be willing to take stands and set policies that will not be "expedient" or politically "smart," but which will reassert fundamental principles that we seem to have forgotten in the headlong rush to let "everyone do his own thing."

What does the future hold for America . . . for Kansas . . . for medicine and its practice? Are we doomed to an Orwellian 1984 brought on by the socialist trends of an egalitarian government bent on redistributing this country's wealth according to its own omniscience? Will Big Brother soon be watching us all? Will we face a great depression that will make the 1929 debacle look like a drop in the bucket,

a depression brought on by this government's unwillingness or inability to control inflation due to its own greed and gluttony under the guise of "humanism"? We cannot criticize government's increasing grab for power and control on the one hand and run to it for monetary or regulatory favors on the other hand.

We must take the lead in solving the health care problems of America. Other voices must be heard, to be sure, but no one else should have the patient's welfare so much at heart as we should. Perhaps some of the problems of late could be traced to the fact that our deeds in this area have not matched our words. I do believe we can provide the answers if we have the will, motivation, determination, and willingness to explore new ideas and concepts while combining and blending them with the proven truths of the past.

My faith in the Kansas Physician has been reaffirmed as I have had the privilege of traveling and meeting with you. I am optimistic about the future because I have sensed a renewal of professional pride among us and a willingness to stand for something good, something noble, and something unselfish.

Faternally yours,

Warren E. Meyer, M.D.

President



Pay Attention

We presume most physicians are aware by this time that the public attitude toward them is one of some disenchantment. We are reminded with increasing frequency that we are tilting on the pedestal if not actually sliding off. In general, the kindest public utterance these days is acknowledgment that physicians are only human beings after all — which is intended as tolerance if not approval of our transgressions. About the only comfort physicians can take is that their status has not diminished so much in comparison with other groups who come into public scrutiny — lawyers, bankers, politicians, the clergy, and so on. Come to think of it, one gets the idea that no one seems to like anyone very much these days.

At any rate, putting down physicians is a popular pastime (particularly with the media who usually disclaim that it is simply their objective, unbiased reporting) and has spawned numerous efforts to find out just what the situation is. History is replete with evidence that the physician has, in most every age, been the object of criticism, but we have comforted ourselves that such was sort of a jesting antidote to the exalted image we preferred but didn't deserve. So one is entitled to wonder whether there is some serious disjuncture between profession and populace, whether we are just more sensitive to the current outcries because we are here and it is now, or whether it is symptomatic of a larger discontent — the current antiauthoritarianism and antielitism in which we are primarily highly visible targets.

The profession's search for answers to these questions is manifested in the not-infrequent individual comments about the matter (even as this) and the almost as frequent panels and discussion groups that are assembled under various auspices to seek the one true answer. This usually means some form of confrontation between representatives of the profession and patients. The most recent of these to come to our attention was in *Patient Care* a few weeks ago. Our first thought was that it repeated many of the previously recorded complaints and didn't settle any

more than its predecessors had, but perhaps we need to take a lesson from the repetition. If there is a theme that is consistent in these sessions, it is the patients' plea for attention.

The reported discussion would have seemed doomed from the beginning if for no other reason than the size of the group. Some 8 physicians and 47 lay persons were listed as participants. All of the former managed to get in a word or two but only 23 of the latter were quoted, so a sizeable majority was silent. It isn't clear whether this was due to their being completely satisfied with their medical care, so dissatisfied as to be rendered mute, or the victims of editing. There was still sufficient discourse reported, however, to assure that every phase of the physician's function received attention — ability, availability, fees, behavior, and attitude — even the inevitable comment that "all doctors drive Cadillacs." (Our '74 Pinto is getting delusions of grandeur.)

In fact, some very cogent observations were made by some of the lay members with a suggestion of willingness to accept the fact that in the hassle of modern medical practice, the physician is almost sinned against as much as sinning. It is apparent, for example, that the public, while not rejecting the principle of insurance, is increasingly aware of it as a mixed blessing. It recognizes the temptation to overutilization by both patient and physician, a result that is highly agreeable to the carriers so long as they can increase their premiums accordingly. When this is no longer tolerable, there is the mechanism of the third party setting fees and dictating methods by virtue of their power of payment, which patients are coming to recognize as inimical to their interests as it is to the physician's. There is growing realization that this coverage, which has been "given" to the worker by his employer, is not given at all but taken out of his pay and ultimately charged to him in his purchases. This increasing awareness may explain in part why the voices demanding a national health

insurance program are primarily those of labor leaders and self-seeking politicians.

One is impressed in reading or listening to such discussions that no desire for a revolutionary alteration of medical service is being advocated despite the broadsides which frequently open them. The reason seems to be that the longer patients talk, the more they come down to a narrow personal attitude in which their discontent really stems from a sense of detachment from their physicians — or rejection by them. In the final analysis, the patient cares less for the physician's wisdom than his attitude. He will forgive the lack of availability or long waits if he gets close, supportive attention once his turn comes. He will consider the fee acceptable if he feels he has had the full benefit of the physician's concern and knows there will be more when necessary. One is reminded of the lyrics of the old song — "It ain't what ya do, it's the way how ya do it."

Somewhere in these sessions, the point is usually made by patients, in criticizing their physicians' failure to discuss matters with them, that they are medically more knowledgeable and sophisticated today. While it is true that they are receiving more medical information from various sources (including physicians), it should be recognized by the patient (as it is by the physician) that this is a matter of acquaintance with terminology and superficial aspects of medical practice which may offer some assistance in understanding the medical components that produce their medical options, but which doesn't necessarily qualify him to develop and direct the course of the chosen option. His decision-making role rightfully applies to the acceptance or rejection of the options. This does not relieve the physician of his responsibility but rather emphasizes his professional responsibility of appropriate disclosure and presentation of information in sufficient depth and form as to permit the patient to act intelligently. In essence, this means that the patient wants the security of the physician's attention, the feeling that he has been given the full measure of the physician's interest — time, intellect, and effort. With this in hand, the patient will not be averse to seeing the physician have an appropriate income, adequate personal time, reasonable choice of practice facilities — even a Cadillac.

Physicians can — and have — countered such expectations by referring to the impossibility of meeting many of them because of reality problems. If one discounts the chronically malcontent fringe of the patient group in these discussions and listens to

those who display the same openness of mind they ask of physicians, it becomes apparent that they are asking not for a one-sided resolution of impossible problems, but the personal contact that will let them feel that they are contributing to the resolution by being made subjects rather than objects.

If we can extract ourselves from the entangling details of our self-proposed objections then we can see that there is a common denominator, and this is what the patients are asking for — sometimes openly, sometimes subtly, most often unconsciously — the need for this sense of a personal relationship. It is an emotional thing — the fact that the physician will take the time and trouble to discuss a matter is more important to the patient than the medical principles present in his comments. When it is lacking, the patient's sense of loss or inadequate fulfillment comes out in forms even he doesn't recognize.

It is worth noting that a follow-up of the lay participants' thoughts following the discussion revealed a distinctly improved feeling on their part about the physician's role in the current scene — a positive recommendation to the profession to promote such exchanges as an effective image-improving maneuver. It is a matter — of some urgency, in fact — of the physician being willing to examine the substance of patients' attitudes rather than resorting to the reflex reaction that such demands are hopeless and simply incompatible with the stringencies of modern medical practice. The physician-patient relationship must be adapted to current procedural demands but it hasn't changed in fundamental character. It is the patient's feeling of security in the hands of the physician — not just a technical security or financial security or survival security, but a personal security denoting his feeling that the physician is someone he can hold on to. To the extent that this is accomplished, patient and physician are both secure in their roles. An outcry for change and the cacophony of criticism is the measure of the patients' feeling of the loss.

We are prompted, with due editorial license, to transfer Dr. Fell from the world of religion to the world of medicine and paraphrase Tom Brown's observation:

*I do not love thee, Dr. Fell.
The reason why, I'm glad to tell.
It's not that you can't make we well —
But you don't love ME, Dr. Fell.*

— D.E.G.



HARWIN J. BROWN, M.D.

Dr. Harwin J. Brown, 69, died February 1, 1979, in Winfield.

Dr. Brown was born in Wisconsin and was graduated from the University of Wisconsin School of Medicine in 1934. Except for time in service with the U.S. Army Medical Corps 1942-1945, he was anesthesiologist for Snyder Clinic from 1938 until his retirement in 1977. He was a past president of the Kansas Society of Anesthesiologists.

Survivors include his wife and one daughter. A memorial has been established with the Snyder Research Foundation.

TRUMAN W. GRAUEL, M.D.

Dr. Truman W. Grauel, 37, died January 3, 1979, in Wichita.

Dr. Grauel was graduated from the University of Wisconsin School of Medicine in 1966. He had practiced obstetrics and gynecology in Wichita for the past five years, and was an assistant professor at UKSM-Wichita.

Survivors include his wife and two sons.

JAMES MARR, M.D.

Dr. James Marr, 57, died January 10, 1979, in Coffeyville.

Dr. Marr was born in California and received his medical education at Washington University School of Medicine, St. Louis, graduating in 1945. He had been chief surgeon at Coffeyville Memorial Hospital since 1976.

Survivors include his wife, four daughters, and two sons. A memorial has been established with Coffeyville Memorial Hospital for the creation of a renal dialysis unit.

ROBERT K. PURVES, M.D.

Dr. Robert K. Purves, 60, died January 6, 1979, in Wichita.

Dr. Purves was graduated from Northwestern Medical School, Chicago, and had practiced surgery in Wichita for 30 years. He had recently resigned as director of St. Joseph Medical Center's Minor Emergency Center West. The St. Joseph's Family Practice Center was named after Dr. Purves in recognition of his influence in the establishment of the Family Practice Residency Program there. He was a delegate to the Kansas Medical Society House of Delegates for 25 years.

Survivors include his wife and four daughters. A memorial has been established with the Edgerton Medical Research Foundation.

Health Care Costs

Successful Containment

Ed. Note: The Second Annual Mid-America Conference on Health Care Costs, held on February 23, 1979, in Lawrence, featured Thomas Nesbitt, M.D., President, American Medical Association, as the keynote speaker. Just as in his inaugural speech on June 21, 1978, Dr. Nesbitt again issued a call to individual physicians to voluntarily restrain fee increases. He suggested that the very real possibility of an expansion of governmental controls over physicians gives each physician a compelling reason to comply. Dr. Nesbitt noted that if physicians can moderate the rate of annual fee increases by one per cent in each of the next two years, the rate of fee escalation would be close to the all items rate, and perhaps under it if the call items index continues to accelerate.

Dr. Nesbitt's call received wide support from government policy-makers as well as from business leaders. We wish to make the inaugural address available to you in its entirety, as presented below.

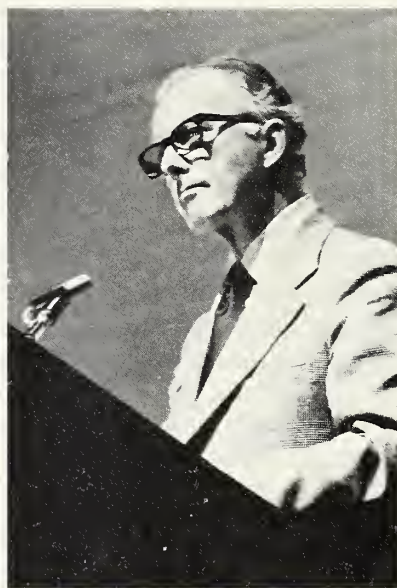
I BEGIN MY FORMAL REMARKS this evening by assuring you that I have given a great deal of time and thought to this, my first message as President of the American Medical Association. I thought of the high honor that election to this office signifies, and I extend to you my sincere gratitude for that honor.

I thought of the heavy responsibilities that the coming year will bring in this time of ordeal, and opportunity, for American medicine. And I extend to you my promise to do my utmost to help fulfill those responsibilities.

I also thought about, and summoned up the fortitude to talk about, what to my mind is the most imposing challenge for physicians today. I am referring to the need for individual physicians, in their own private practices, to voluntarily restrain the rate of professional fee increases.

I am well aware that historically any discussion of the individual physician's right to determine professional fee levels has been all but forbidden ground for an officer of the AMA. Despite that fact, I am going to make this request a focal point not only of this inaugural but also a focal point of my message to America's physicians during the coming year. And while this message will be informal to the extent that it calls only for voluntary responses by individual physicians, there are some very compelling reasons why physicians should comply.

If certain proposals now in the Congress are enacted, for example, the forbidden ground of professional fees will become a playground for legis-



Thomas Nesbitt, M.D., AMA President

lators, economists, health planners, consumerists, and whomever. I refer, of course, to the legislative proposals which would impose arbitrary revenue restraints on hospitals, and perhaps extend such restraints to private practice, as some have proposed; if these proposals are enacted, then we can forget all the rhetoric about issues such as health planning guidelines and national health insurance.

Because if government controls over hospital revenues and professional fees are added to existing controls arising from government's substantial health insurance financing commitments, then for all practical purposes government will in fact control the quality and the quantity (in terms of access) of the medical care system as a whole. In short, the rationing of care, a la the British National Health Service, will be imposed on America. And while recent polls show that a majority of Americans favor national health insurance, they are against a national health service — financed through higher taxes and controlled by Washington.

To preclude such an eventuality, however, the private sector must provide effective voluntary alternatives, including cost control alternatives. And — as an officer of the AMA and a practicing physician — concern for the future of our profession prompts me to ask individual physicians, too, to demonstrate

their sincerity by restraining the rate of professional fee increases.

Parenthetically, I believe that asking for such voluntary restraints by physicians is as reasonable as it is pivotal. It is reasonable because of the recent opinion polls which show what a majority of physicians, along with a majority of the general public, agree that the major health care concerns in our society today revolve around the cost issue. It is reasonable because I am not — I repeat, I am not — asking each physician in this country to suddenly make an across-the-board reduction in specific fees for specific professional services.

We physicians, after all, are not exempt from the hard realities of today's economy. We, too, are subject to higher overhead costs due to factors such as rising prices for heating fuel and medical supplies, employee wage increases and the general inflationary spiral, and these added costs necessitate periodic increases in our professional fees.

What each of us can do, however, is place realistic restraints on the rate of these periodic escalations, realistic in terms of allowing us to cope with the effects of inflation while maintaining the quality of patient care. This request is reasonable because it is asking no more of individual physicians than what we are asking of other components of the medical system. If we expect hospitals to reduce their rate of spending increases by two percentage points in each of the next two years, for example, then it is proper for us to demonstrate our own sincerity and good faith by moderating our fee escalation rates.

I should add that for most of us the resulting financial difference itself would be moderate since it would be merely an extension of an already existing downward trend in the rate of professional fee increases. Evidence of this downward trend is provided by the Consumer Price Index (or CPI) of the U. S. Department of Labor which reveals that the rate of increase in physician fees has been declining since 1975.

The CPI does show that during the year immediately following the end of federal price controls (between May of 1974 and May of 1975), physician fees increased 13.2 percent. But the "catching up" associated with the end of price controls has substantially moderated since then. During 1977, for example, the rate of increase in physician fees was 9.2 percent, or 4 percentage points less than the rate for the 12-month period ending in May 1975. For purposes of comparison, and using the same time frames, increases in the "all items" component of the CPI dropped from 9.5 to 6.8 percent.

In short, if each physician can moderate annual fee

increase rates by just one percent in each of the next two years, our fee escalation rate would be close to the "all items" rate — perhaps even under it if recent all-items price increases continue. So by merely extending an existing trend, we can provide ourselves with a very visible — and extremely persuasive — argument in our struggle to preserve our pluralistic medical care system, which emphasizes voluntary problem-solving by the private sector.

The most formidable challenge by far facing American medicine in the coming months and years will be to deal forcefully with the cost problem which, in the final analysis, means forceful action by each physician. In that respect, my request for professional fee restraints may be unreasonable to the extent that many physicians simply don't know how to moderate the costs of medical practice — and hence their fees. In this regard, there is a wide variety of possible approaches.

For example, the AMA will sponsor 202 practice management workshops across the nation this year. Offering sound advice on improved efficiency and productivity in medical practice, it is estimated that increased office efficiency alone can reduce practice costs by as much as 5 percent.

Other possible answers have been suggested by the National Commission on the Cost of Medical Care. Certainly their recommendations already have been given considerable attention at this Annual Convention. Basically, the Commission stresses the importance of participation by individual physicians in local cost moderation efforts, many of which are applicable to the physician's office, as well as to the hospital.

Local peer review and utilization review programs are cases in point. Reasonable guidelines for medical care, based on necessity as well as quality, can help reduce costs. But only if individual physicians participate in, and abide by, the development and dissemination of these guidelines. Of course, the real medical needs of patients must continue to receive the highest priority, whether in the hospital or in our offices. Nevertheless, rough guidelines for determining the necessity and appropriateness of medical care can serve as a rough yardstick for individual physicians in assessing patient needs before, and after, hospitalization.

Furthermore, other segments of our society (notably government and the public-at-large) have to be more responsible in their approaches to cost moderation — with the emphasis on "responsible." Certainly the Carter Administration's proposal to slap a flat, arbitrary limit on hospital revenues would be irresponsible.

By contrast, in my view, the current Voluntary Effort is responsible. While on this subject, one cannot help but speculate as to the motivation, and hypocrisy, behind a recent decision by the Carter-Califano team. I am referring to their specious decision to call for voluntary restraints by industry on the one hand, while attempting to sabotage our own Voluntary Effort on the other hand, by asking the Justice Department to not grant us an exemption from potential anti-trust action.

Apparently, some people in government are determined to ignore the irrefutable fact in medicine, namely that we cannot provide high quality care to patients for less than its basic cost.

Meanwhile, our society must somehow persuade Americans that more healthful lifestyles can do more to reduce medical costs than all other efforts combined. We will take a step in that direction next month at the Joint Conference on Positive Health Strategies developed by the AMA and Senator Kennedy. It will be my privilege to join the Senator in co-chairing the Conference which will be held July 25 through the 27th in Washington, D. C.

The Conference itself, co-sponsored by twelve other national organizations broadly representative of our society, will focus on positive health strategies for schools, communities and the work place — as well as possible health action programs for the future. But, to me, the Conference also demonstrates that representatives of the private and the public sectors can put aside their differences, and in mutual good faith seek practical solutions to real health care problems.

This is in stark contrast to the reprehensible attitude recently displayed by President Carter when he attacked the professions and private institutions, including lawyers, physicians and the AMA. In a letter of response, the AMA reminded Mr. Carter of this Association's manifold accomplishments in promoting good health and high quality medical care for the American people. Our response also deplored the questionable logic of impugning the good faith of physicians at a time when mutual action by the public and private sectors is so essential to the resolution of problems.

The White House also was struck by some well-placed editorial shots from the news media. The "Washington Post" took special aim at the President's seeming reluctance to "let doctors organize into the AMA." In a lead editorial the "Post" emphasized that, "The verb 'let' has an unwholesome connotation as though the right to organize could be extended or revoked as someone saw fit." I believe the "Post's" analysis might be extended by re-

mindings Mr. Carter that America is built on democratic principles, with a small "d."

Not the least of these principles is that strong, vigorous private associations serve as a check, and a balance, against the unreasonable growth of government and the unreasonable exercise of power and arrogance often attached thereto. Therefore, it seems to me that rather than make gratuitous attacks on private sector professions and institutions, the President would be better advised to devote his energies to more constructive pursuits — including the thus-far futile pursuit of his own campaign promises.

But if it's a fight that Mr. Carter wants — then it's a fight he'll get! Because we physicians are well advised to continue our struggle to avoid the pitfalls inherent in governmentalized medicine. For example, during recent AMA-sponsored trips to study health care systems in Europe and the Far East, these pitfalls truly became apparent.

Any government-enacted and government-dominated health care insurance program inevitably results in significant reductions in the quality — and ultimately the quantity — of medical services available to patients. And this reduction may have several manifestations such as cut-backs in research, detrimental changes in the curricula and length of training of physicians, and diminished quality in terms of a nonavailability of the modern medical technology that Americans have come to take for granted. The upshot of all this would be a reduction — or rationing — in the quantity of medical services available to patients.

This is evident in Great Britain; it is dramatically illustrated in the People's Republic of China; and it is currently being confronted as a crucial issue by the Medical Associations of Japan and Australia. And, of course, it has obvious implications for the "Great Health Care Debate" here in our own country. In all areas, not just in medicine, our society — like other societies — is facing the difficult task of seeking an accommodation between the virtually unlimited wants and needs of individual citizens, and the limited resources — financial and otherwise — available to fulfill those wants and meet those needs.

It should be obvious that every physician shares in the responsibility to help our society make the right choices. Both as individual practitioners, and as a profession made strong through this medical federation of ours, we must help fashion practical, effective answers to problems, with no little emphasis on voluntary answers to cost problems.

I say all this knowing full well that we can be discouraged by the difficulty of reaching a consensus on the right choices even among ourselves, much

less a consensus with other segments of our society including government. The adoption of new policies, after all, often creates disagreement both within and without the profession, as the Delegates at this Annual Meeting can attest.

We can also be discouraged by those critics who insist that this Association is a doddering, debilitated relic of the past. Well, I have a couple of appropriate, closing quotations which offer large measures of reassurance.

The first one pointed out:

"Doubtless each member of the House has an opinion . . . on each of the various issues which may be considered at this Session of the House. It is reasonable to expect these opinions to conflict to some extent when we think of the wide variations in the local problems (of) various communities throughout the country."

That statement was made forty years ago by Dr. Harrison Shoulders, who was then Speaker of the House, and who subsequently preceded me as an AMA President from Nashville, Tennessee.

The second quotation goes like this:

"It is no secret that there has been an attempt in various places to lead the American people to

believe that the (AMA) is not representative of the American medical profession, that it is a weakened, disrupted, failing organization."

And yes, that statement, too, is forty years old, made in 1938 by Dr. Irvin Abell, then President of the AMA.

For decades, then, critics have been greatly exaggerating the death of the AMA; and the reason they do so is that to impose their own social views on the public, they must first seek to discredit their strongest rivals. And this federation of ours is much stronger in 1978 than it was in 1938.

It is stronger in its support for continued rivalry between the public and the private sectors, which is healthy for democracy as a whole. It is stronger in terms of its pragmatic policies, programs and proposals to deal with contemporary health care problems. It is stronger as both protector and promoter of American medicine's superb, healing quality in medical education and practice.

And it is squarely up to you, and me, and every physician in this country worth the name to keep it that way.

You have my unqualified pledge to disseminate these truths during the coming year.

IDENTIFICATION AND MOTIVATIONS OF THE IMPAIRED PHYSICIAN

a workshop presented by

THE IMPAIRED PHYSICIAN PROGRAM of the KANSAS MEDICAL SOCIETY

Saturday
April 28, 1979

Tower Building
Menninger West Campus

8:30 AM - 5:00 PM

As an organization accredited for continuing medical education, the Kansas Medical Society designates this continuing medical activity as meeting the criteria for 6 credit hours in Category II of the Physician's Recognition Award of the American Medical Association.

Additional information available from the KMS office (913-235-2383).



Personalities —IN KANSAS MEDICINE

Richard Cummings, Wichita, was guest lecturer at a recent seminar on otologic disorders and audiological assessment. This seminar — sponsored by UKSM-Wichita and the Center for Continuing Health Education at Wichita State University — was part of the Fourth Annual Harper Seminar Series and Mobile In-Service Education Program which provides continuing education to area health professionals.

Prior to his departure to a new practice location in Springfield, Missouri, **Lindell C. Owensby** was presented with an award recognizing his service to the citizens of the Concordia area.

Bruce Pfuetze, Kansas City, presented the program at a recent seminar for physicians, "Newer Concepts in Pediatric Asthma," sponsored by the Kansas Lung Association and the Shawnee Mission Medical Center.

W. G. Pereira, Arkansas City, is serving as chairman for the 1979 Heart Fund Campaign for Cowley County.

Hall Harrison, Topeka, recently testified before a Kansas Senate committee on the value of cardiopulmonary resuscitation (CPR) training in the public schools.

James L. Casey addressed a recent meeting of the Reno County Association for Children with Learning Disabilities. His topic was "Medical Aspects of Learning and Behavioral Problems."

All interested persons were invited to attend a recent industrial luncheon at Prairie View Mental Health Center, Newton, to hear **Vernon Yoder**, Medical Director, discuss "Employee Apathy and Depression."

Dean's Letter

(Continued from page 104)

plemented, nearly 50 per cent of the medical class (over 300 students) entered the program. The vast majority plan to practice in areas of the state that have physician shortages, especially in primary care.

New and continuing challenges will be addressed in the coming year. We have a major commitment to continue to support the educational programs in Kansas City and Wichita. We also have a vital interest in addressing the concerns of physicians and health care professionals across the state. I value your suggestions and welcome them.

NEW DERMATOLOGY JOURNAL EDITOR

Frederick D. Malkinson, M.D., has been named editor of the American Medical Association's specialty journal in diseases of the skin, *Archives of Dermatology*.

Dr. Malkinson is professor and chief of dermatology at Rush-Presbyterian-St. Luke's Medical Center in Chicago. A Harvard graduate in medicine and dentistry, Dr. Malkinson completed his residency in dermatology at the University of Chicago and served on the faculty there for many years.

Dr. Malkinson also will be a member of the editorial board of the *Journal of the AMA*. He succeeds John H. Epstein, M.D., of San Francisco, as chief editor of the *Archives*.

REVISED FORMAT STATE MEETING

IMPORTANT MEETING REMINDER

120th Annual Session of
THE KANSAS MEDICAL SOCIETY

May 3-6, 1979

Holiday Inn-Holidome, Hutchinson

New Format—Thursday-Sunday

<i>Thursday, May 3</i>	Sports Day Sports Banquet	
<i>Friday, May 4</i>	House of Delegates Delegates Luncheon Reference Committee KaMPAC Hospitality Suite Special Entertainment	9:00 a.m. 12:30 p.m. 2:00 p.m. 4:00 p.m.
<i>Saturday, May 5</i>	Past Presidents Breakfast Scientific Session General Luncheon KU Alumni Reception for Physicians & Spouses Annual Presidents Banquet	7:30 a.m. 8:30 a.m.-5:00 p.m. 12:00 noon 5:30 p.m. 7:00 p.m.
<i>Sunday, May 6</i>	Early Bird Breakfast House of Delegates Council Luncheon & Meeting	7:30 a.m. 9:00 a.m. 1:00 p.m.

Detailed information and registration forms will be mailed prior to the meeting.

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.

1009 McGee St.

VI 2-4750

KANSAS CITY, MO.

FACULTY POSITIONS AVAILABLE

Two full-time faculty positions available immediately in a well-established university academic department of family medicine. Expanding to forty-four residents 7/1/79; resident and undergraduate medical student teaching, patient care, administration and research responsibilities. Salary open with fringe benefits. Inquiries and C.V. to:

Jack D. Walker, M.D.,
Professor & Chairman
Department of Family Practice
University of Kansas Medical Center
39th and Rainbow Boulevard
Kansas City, Kansas 66103

An Equal Opportunity Employer

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

Rational Use of Aspirin

(Continued from page 159)

Answers

1. b, c, d
2. b, e
3. c, then d, then a—

Some rheumatologists would answer c, then e, then d, then a. Available buffered aspirin preparations are sometimes better tolerated than regular aspirin but do not contain enough antacid to reduce gastrointestinal microbleeding. Regular aspirin taken with adequate doses of liquid antacid should improve gastrointestinal tolerance and reduce gastric microbleeding.

4. d
5. a, b, d, e

Tinnitus usually indicates an anti-inflammatory level of serum salicylate. The dose would have to be lowered by one or two regular aspirin tablets to stop the tinnitus.

Suggested Readings

1. Champion, G. D.; Day, R. O.; Graham, G. G. and Paull, P. D.: Salicylates in rheumatoid arthritis. *Clinics in Rheumatic Diseases* 1:245-265, 1975.
2. Hart, F. D.: The new antirheumatic drugs. *Drugs* 9:321-325, 1975.
3. Decker, J. L.: The management of rheumatoid arthritis. *Resident and Staff Physician* 24:50-55, August 1978.
4. Wilkens, R. F.: The use of nonsteroidal anti-inflammatory agents. *JAMA* 240:1632-1635, 1978.
5. The cooperating clinics of the ARA: A seven-day variability study of 499 patients with peripheral rheumatoid arthritis. *Arthritis Rheum.* 8:302-334, 1965.

**Are You Getting Your Journal
Regularly?**

If Not...

**Have You Notified the Society's
Executive Office of Your New Address?**

Send all changes of address to:

**THE KANSAS MEDICAL SOCIETY
1300 Topeka Avenue
Topeka, Kansas 66612**

Librax®

Each capsule contains 5 mg
chlordiazepoxide HCl and 2.5 mg cimetidine Br.

Please consult complete prescribing information, a summary of which follows:

Indications: Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective: as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

Final classification of the less-than-effective indications requires further investigation.

Contraindications: Glaucoma; prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or cimetidine Br.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

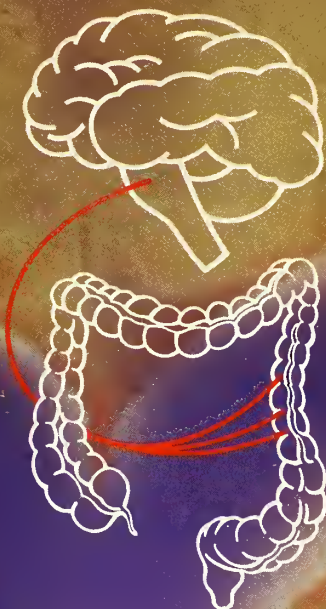
As with all anticholinergics, inhibition of lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



Roche Products Inc.
Manati, Puerto Rico 00701



In treating irritable bowel syndrome*
Enhance your therapeutic expectations
with

Librax[®]

Each capsule contains
5 mg chlordiazepoxide HCl
and 2.5 mg clidinium Br.

antianxiety/antispasmodic/antimotility

Librax is unique among G.I. medications
in providing the specific antianxiety action of
LIBRIUM[®] (chlordiazepoxide HCl) as well as the potent
antispasmodic and antimotility actions of
QUARZAN[®] (clidinium Br) for adjunctive therapy
of irritable bowel syndrome.



*Librax has been evaluated as possibly effective for this indication.
Please see brief summary of prescribing information on preceding page.



EMPIRIN[®] COMPOUND c CODEINE

Each tablet contains aspirin, 227 mg; phenacetin, 162 mg, and caffeine, 32 mg; plus codeine phosphate in one of the following strengths: #4—60 mg (gr 1); #3—30 mg (gr ½); #2—15 mg (gr ¼), and #1—7.5 mg (gr ⅛). (Warning—may be habit forming)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	(913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission ..	(913) 362-4040
Roy Neil, M.D., Hays	(913) 628-3215
George M. Penn, M.D., Topeka	(913) 234-9566
Ivan Rhodes, M.D., Wichita	(316) 685-1291
Alex Scott, M.D., Junction City	(913) 238-2518
M. C. Spencer, M.D., Topeka	(913) 234-3451
Max Teare, M.D., Garden City	(316) 276-7689
Kermit Wedel, M.D., Minneapolis	(913) 392-2144
Kansas Medical Society, Topeka	(913) 235-2383/235-3619

Accept no substitute for your professional judgment

As a physician, you have the right to prescribe the drug which you believe will most benefit your patients. Now, substitution laws make it more difficult to exercise that right. In many states, unless you specifically direct pharmacists to dispense your brand-name prescription as written, they may be required by law to substitute another drug for your brand-name prescription.

This means that the ultimate drug selection is no longer yours; its source is left to the pharmacist's discretion. You will have forfeited your right to prescribe as you see fit. Preserve your rights. Specify that you will accept no substitution.

When you accept no substitutes...

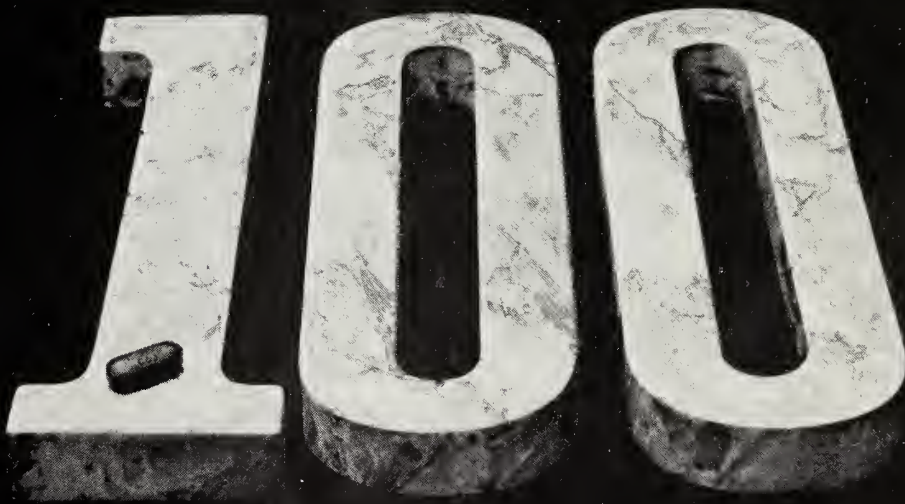
- You ensure that your patient receives exactly that product you have specified on your prescription
- You choose the quality of the product dispensed to your patient
- You can exercise the right to select a product based upon its proven therapeutic performance and to select a manufacturer that stands behind its brand name or generic product
- You can support the kinds of research programs that are vital to new drug discovery and development
- You can help sustain important physician, pharmacist and patient education services supported by innovative, research-oriented firms

For complete information on the drug substitution law effective in your state, please consult your local Pfizer Representative.

contains no aspirin

tablets
Darvocet-N[®] 100 (IV)

100 mg. Darvon-N[®] (propoxyphene napsylate)
650 mg. acetaminophen



700565

*Additional information available
to the profession on request from
Eli Lilly and Company
Indianapolis, Indiana 46206*

Eli Lilly and Company, Inc.
Carolina, Puerto Rico 00630

★

Specialized Service

IN

PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction

MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

Professional Protection Exclusively since 1899

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-B, 6600 West 95th Street, Overland Park, Kansas 66212

Telephone: (Area Code 913) 381-4222

SERVING YOU IN KANSAS



501 Gage
P.O. Box 399
Topeka, Kansas 66601
913/272-2300

2959 S. Spruce
Wichita, Ks 67216
316-522-8111

9202 Barton
Overland Park, Ks 66214
913-492-5820



Dyazide[®]

Each capsule contains 50 mg. of Dyrenium[®] (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Makes Sense in Hypertension*

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

* **Warning**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spiro-lactone is used concomitantly, determine serum K⁺ frequently; both can cause K⁺ retention and elevated serum K⁺. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
a SmithKline company

Carolina, P.R. 00630

**When painful spasm
is the presenting
symptom...**



...in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects[†]

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis), paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia, increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSAGE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg. capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg.: *Adults:* 1 tablet three or four times daily. Bentyl Injection: *Adults:* 2 ml. (20 mg.) every four to six hours intramuscularly only. **NOT FOR INTRAVENOUS USE.** **MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanechol chloride USP) should be used.

Product Information as of October, 1978.

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Decatur, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.

CHANGE OF ADDRESS

Please notify the
Kansas Medical Society
of any changes in address

*Help keep the mailing list
up to date*

The advertising in THE JOURNAL

keeps you informed
and helps pay the
publishing costs!

When the local
representative calls,
tell him you saw
his company's ad in
your journal.

Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

HEALTH INFORMATION ACCESS

Extended biomedical library services are available to all Kansas Health Personnel who have limited or no library facilities.

For:

- . . . Prompt medical reference services
- . . . Preparation of bibliographies/computerized literature searches
- . . . Photocopying and mailing of book and journal articles

Dial toll-free: 1-800-332-4193 UKSM Kansas City, KS

There are trained Medical Librarians on duty Monday through Friday from 8 AM to 5 PM to answer your information needs.

THE UNIVERSITY OF KANSAS COLLEGE OF HEALTH SCIENCES AND HOSPITAL DIVISION OF CONTINUING EDUCATION

Symposia:
NONINVASIVE CARDIAC DIAGNOSIS

April 23 and 24, 1979

Guest Faculty:
ERNEST CRAIGE, M.D., University of North Carolina School of Medicine, Chapel Hill.
EDWARD H. FISCHER, M.D., Trinity Lutheran Hospital, Kansas City, Missouri.
ROBERT A. O'ROURKE, M.D., The University of Texas Health Science Center, San Antonio.

Subjects to be discussed will include: X-RAY CLUES IN THE DIAGNOSIS OF HEART DISEASE; BEDSIDE MANEUVERS HELPFUL IN CARDIAC AUSCULTATION; MITRAL STENOSIS; THE GENESIS OF HEART SOUNDS; THE NATURAL HISTORY OF THE CLICK MURMUR SYNDROME; AORTIC VALVE STENOSIS; THE VALUE OF TREADMILL EXERCISE TESTING; ISOTOPE IMAGING IN ANGINA PECTORIS AND MYOCARDIAL INFARCTION; ECHOCARDIOGRAPHIC ASSESSMENT OF LV FUNCTION.

Accreditation:
American Medical Association: 14½ hours of Category I.
American Academy of Family Physicians: 14½ prescribed hours.
Registration Fee: \$85.00.

FAMILY PRACTICE (To be offered at Radisson Muehlebach Hotel, Kansas City, Missouri)

April 25 and 26, 1979

Guest Faculty:
RICHARD J. CUMMINGS, M.D., St. Francis Hospital, St. Joseph Medical Center and Wesley Medical Center, Wichita, Kansas.
T. REID ECTON, D.P.M., Veterans Administration Hospital, Leavenworth, Kansas and Providence-St. Margaret Health Center, Kansas City, Kansas.

Subjects to be discussed will include: RECURRENT OTITIS MEDIA; CROUP VS. EPIGLOTTITIS; THE SURGICAL MANAGEMENT OF HEARING LOSS; THE DIAGNOSIS AND MANAGEMENT OF FACIAL INJURIES; THE DIFFERENTIAL DIAGNOSIS OF NONCARDIAC CHEST PAIN; CORONARY BY-PASS SURGERY — AN UPDATE; CORONARY SPASM AND PRINZMETAL ANGINA; PROSTATE DISEASE — MEDICAL AND SURGICAL MANAGEMENT; COMMON MALIGNANCIES OF THE RENAL SYSTEM; URINARY TRACT INFECTIONS — DIAGNOSIS AND MANAGEMENT; COMMON FOOT PROBLEMS; BIOMECHANIC PROBLEMS OF THE FOOT AND LEG IN SPORTS; LOWER EXTREMITY ALIGNMENT PROBLEMS IN CHILDREN.

Accreditation:
American Medical Association: 15 hours of Category I.
American Academy of Family Physicians: 15 prescribed hours.
Registration Fee: \$110.00.

**For program announcements and information, write: DIVISION OF CONTINUING EDUCATION,
The University of Kansas College of Health Sciences and Hospital, Kansas City, Kansas 66103**

INDEX TO ADVERTISERS

Beltone Electronic Corporation	94
Burroughs Wellcome Co.	100, 176b
Capitol Federal Savings & Loan Ass'n	175
Central Bank & Trust	102
Goetze-Niemer Company	95
P. W. Hanicke Manufacturing Company	175
Health Central	98
Lattimore-Fink Laboratories	95
Eli Lilly Company	179
Mead Johnson Pharmaceutical Division	96a, 96b
Medical Protective Company	180
The Menninger Foundation	98
Merck Sharp & Dohme	92d
Merrell-National Laboratories	92, 92a, 180b, 181, 182
Mid-America Computing, Inc.	184
Midwest Pension Planners	89
Munns Medical Supply	180
Pfizer Laboratories	178
Purepac Pharmaceutical Co.	99
PVO International	101
Roche Laboratories	90, 176, 176a, C3, C4
Shared Service Systems	102
Smith Kline & French	180a
UKSM Dept. of Family Practice	175
The Upjohn Company	92b, 92c, 92d
US Air Force Recruiting	91
Warner/Chilcott Laboratories	93

CLASSIFIED ADVERTISEMENTS

FAMILY PRACTITIONER: 20 miles to Mt. Sunflower, skiing 3½ hrs; country living; excellent income. New hospital/clinic with ICU, CCU, isotopes, xeromammography; visiting specialists, 3 family practitioners, 1 surgeon. Reply to Clitus W. Olson, M.D., 520 Main St., Goodland, KS 67735, (913) 899-5651.

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the JOURNAL.

FOR SALE: Soundscribe equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

Mid-America Cancer Center Program seeking Associate Director for Cancer Outreach. Experience in clinical aspects of cancer, education, and community relations. Contact James T. Lowan, M.D., Director, Mid-America Cancer Center, KUMC, 39th & Rainbow, Kansas City, KS 66103.



**INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with**

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; everything in order — accurately!

Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215 • (913) 492-8805
P.O. Box 1441, Wichita, Kansas 67201 • (316) 261-5500

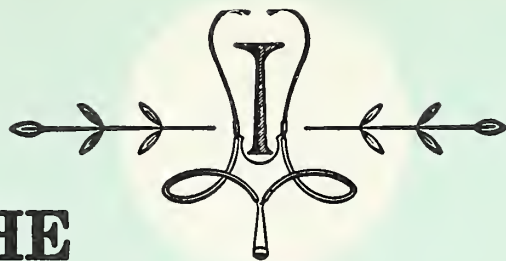
*"Let
MAC
do it"*



U.C. SAN FRANCISCO

APR 27 1979

Program Issue

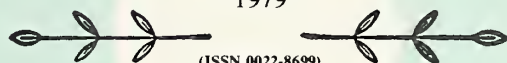


THE

Journal

Kansas
Medical
Society

APRIL
1979



(ISSN 0022-8699)

VOL. LXXX
NO. I V

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for April

Kansas Medical Society 120th Annual Session

Advertisers	232
Classified Advertisements	232
Council District Reports	217
Educational Grants	212
Hosts for the Meeting	209
Impaired Physician Program Resource List	200
Information for Authors	228
Kansas Medical Assistants Society Program	189
Kansas Medical Society Auxiliary Program	199
Necrology Report	219
Program	209
Resolutions	213
Speakers	204
Welcome to Hutchinson	203

Copyright 1979, by the Kansas Medical Society. Indexed in "Hospital Literature Index," "Index Medicus." Available through University Microfilms. Listed in "CC/Clinical Practice."

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.;
Editorial Assistant: Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

WHAT WILL APRIL 15, 1980 COST YOU?

Probably more than you'd like. But planning *now* can help — and we have sensible answers to important questions.

DID YOU KNOW:

1. That by Incorporating your practice you could substantially save tax dollars.
2. You may not be receiving full benefit from Pension and Profit Sharing/Tax Shelters.
3. That by having Keogh Plan with higher contribution limits, you can benefit.
4. You may not be receiving Maximum Tax Savings from Fringe Benefits.
5. That you can plan more effective ways of reducing your Estate Asset Tax Liability.



JOHN E. LYONS
MIDWEST PENSION PLANNERS

CLIP & RETURN

CLIP & RETURN

John:

Yes, I'm concerned about my tax position in 1980 and I'd like more information on:

- ☐ Incorporating my practice
- ☐ Pension and Profit Sharing/Tax Shelters
- ☐ Keogh Plans — with higher contribution limits
- ☐ Fringe Benefit Tax Planning
- ☐ Estate Asset Tax Liability

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



JOHN E. LYONS
MIDWEST PENSION PLANNERS

Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913-235-5301

contains no aspirin

tablets

Darvocet-N[®] 100 (IV)

100 mg. Darvon-N[®] (propoxyphene napsylate)
650 mg. acetaminophen



Lilly

700565

*Additional information available
to the profession on request from
Eli Lilly and Company
Indianapolis, Indiana 46206*

Eli Lilly and Company, Inc.
Carolina, Puerto Rico 00630

**120th Annual Session
KANSAS MEDICAL SOCIETY**

**May 3-6, 1979
HUTCHINSON, KANSAS**

**Holiday Inn-Holidome
and
Hutchinson Hospital**

Thursday, May 3—Sports Day, Prairie Dunes Country Club

**Friday, May 4—House of Delegates First Session, 9:00 AM—
Holiday Inn-Holidome**

**Saturday, May 5—Scientific Session: A Day of Clinical Cardiology,
Holiday Inn-Holidome, 8:45 AM-5:00 PM**

**Sunday, May 6—House of Delegates Second Session, Holiday Inn-
Holidome, 9:00 AM**



PEDIATRIC INDICATIONS*
FOR BACTRIM CONTINUE
TO GROW...

*URINARY TRACT
INFECTIONS*

*PNEUMOCYSTIS
CARINII
PNEUMONITIS*

SHIGELLOSIS

*ACUTE OTITIS
MEDIA*

**Involving susceptible organisms.*

Please see Indications section in summary of product information on last page of this advertisement.

NOW... ROCHE INTRODUCES

NEW CHERRY FLAVOR **BACTRIMTM** **PEDIATRIC** **SUSPENSION**

Each teaspoonful (5 ml) contains
40 mg trimethoprim and 200 mg sulfamethoxazole.



(Prescription
for a 10-kg
[22-lb] child)

Be sure to specify

ESPECIALLY FLAVORED FOR CHILDREN*

Also available: The original fruit-licorice flavor to be prescribed
as "Bactrim Suspension." The same active ingredient formulation—the difference is the flavor.

*Contraindicated in children under 2 months of age.

Please see summary of product information on following page.

BACTRIM

(trimethoprim and sulfamethoxazole)

ROCHE

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections. For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. Limited clinical information presently available on effectiveness of treatment of otitis media with Bactrim when infection is due to ampicillin-resistant *Haemophilus influenzae*. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age. For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis. To date, this drug has been tested only in patients 9 months to 16 years of age who were immunosuppressed by cancer therapy.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides, pregnancy, nursing mothers, infants less than two months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. Blood dyscrasias: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. Allergic reactions: Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. Gastrointestinal reactions: Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea and pancreatitis. CNS reactions: Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. Miscellaneous reactions: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis. A guide follows. Children two months of age or older

Weight		Dose—every 12 hours	
lbs	kgs	Teaspoonfuls	Tablets
22	10	1 teasp (5 ml)	½ tablet
44	20	2 teasp (10 ml)	1 tablet
66	30	3 teasp (15 ml)	1½ tablets
88	40	4 teasp (20 ml)	2 tablets or 1 DS tablet

For patients with renal impairment

Creatinine Clearance (ml/min)	Recommended Dosage Regimen
Above 30	Usual standard regimen
15-30	½ the usual regimen
Below 15	Use not recommended

PNEUMOCYSTIS CARINII PNEUMONITIS: Recommended dosage, 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100. Tel-E-Dose® packages of 100, Prescription Paks of 20. Tablets each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500, Tel-E-Dose® packages of 100, Prescription Paks of 40, available singly and in trays of 10. Pediatric Suspension, containing in each teaspoonful (5 ml) the equivalent of 40 mg trimethoprim and 200 mg sulfamethoxazole—cherry flavored—bottles of 16 oz (1 pint). Suspension, containing in each teaspoonful (5 ml) the equivalent of 40 mg trimethoprim and 200 mg sulfamethoxazole, fruit-licorice flavored—bottles of 16 oz (1 pint).

April, 1979 Meetings

- April 4-7 **Tennessee Medical Association**
Airport Milton Inn
Memphis, Tennessee
- April 19-21 **Alabama Medical Association**
Birmingham Hyatt House, Civic Center
Birmingham, Alabama
- April 19-22 **Missouri State Medical Association**
Chase-Park Plaza Hotel
St. Louis, Missouri
- April 20-22 **Georgia Medical Association**
De Soto Hilton
Savannah, Georgia
- April 21-22 **Iowa Medical Society**
Hyatt House
Des Moines, Iowa
- April 22-25 **Arkansas Medical Society**
Little Rock Convention Center
Little Rock, Arkansas
- April 25-29 **Arizona Medical Association**
Safari Hotel
Scottsdale, Arizona
- April 26-29 **South Carolina Medical Association**
Myrtle Beach Hilton
Myrtle Beach, South Carolina
- April 29-May 2 **Nebraska Medical Association**
Holiday Inn
Kearney, Nebraska

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Kansas Medical Assistants Society

39th Annual Convention
April 27-29, 1979, Holiday Inn-Holidome, Hutchinson

Friday, April 27, 1979

- 3:00** REGISTRATION
3:00 EXECUTIVE COUNCIL MEETING
5:00 LEADERSHIP SEMINARS
Presidents, Vice Presidents, *Ambassador*
Reporters, Treasurers, Secretaries, Educa-
tion, Certification, Membership, Con-
stitution and Bylaws
7:30 "SOUTH OF THE BORDER"
Courtesy Munns Medical Supply, Inc.

Saturday, April 28, 1979

- 7:00** SELF ASSESSMENT TEST
7:30 "IRELAND SWEETHEARTS"
KMAS Past Presidents' Breakfast
8:30 Registration — Delegates and Alternate Del-
egates
9:00 GENERAL SESSION
Marilyn Young, Presiding
Invocation and Creed
Dorothy Nunemaker
Presentation of Colors
National Anthem
Hope Finley, Past KMAS President
Pledge of Allegiance
Thelma Moody, President
Reno County Chapter
Welcome
H. T. Lettner, M.D., Past President
Reno County Medical Society
Response
Joan Schrag
Mayor of Hutchinson
Welcome
Thelma Moody, President
Reno County Chapter
9:20 HOUSE OF DELEGATES
Anna Marie Dercher, Presiding
10:30 COFFEE BREAK
Courtesy Reno County Medical Society
10:45 HOUSE OF DELEGATES
12:00 "SWITZERLAND BELLES"—Luncheon
Chapter Presidents and Presidents-Elect

"HOLLAND EDUCATORS"—Luncheon
CMAs only

- 1:15** GENERAL SESSION
1:30 FORENSIC PATHOLOGY
H. T. Lettner, M.D., Hutchinson
2:30 ARTHRITIS
D. G. Anderson, M.D., Hutchinson
3:30 COFFEE BREAK
4:00 CHILD ABUSE
Agnes Locke; P. L. Cherven, M.D.;
and Susan Cherven, Hutchinson
7:30 "ALOHA"—Inaugural Banquet
Marilyn Young, Presiding
Dean T. Collins, M.D., Topeka
Master of Ceremonies
Warren E. Meyer, M.D., President, KMS
Introduction of Chapter Presidents
Introduction of Past KMAS Presidents
Invocation
Entertainment
Installation

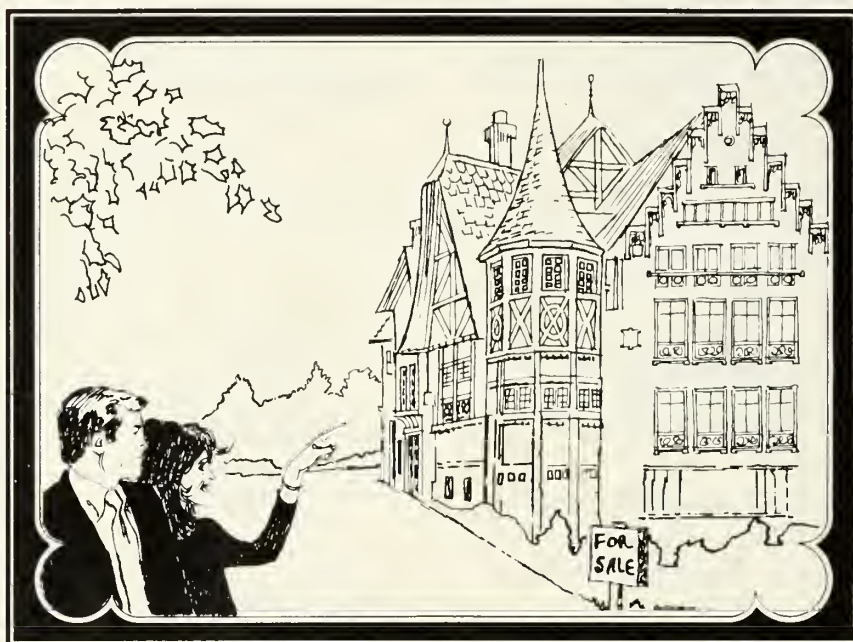
Sunday, April 29, 1979

- 7:00** EXECUTIVE COUNCIL MEETING
7:00 BUFFET BREAKFAST
8:15 GENERAL SESSION
Marilyn Young, Presiding
Invocation
Rhea Bess
8:30 Speaker—AAMA Representative
9:00 "SMALL KIDS, TALL KIDS, FAT KIDS, SKINNY
KIDS—AND OTHER THINGS"
James L. Casey, M.D., Hutchinson
10:00 "FROM KINGMAN, KANSAS, TO WEST AF-
RICA"
Eileen Hawkins, R.N., N.C.
12:00 "GOD BLESS AMERICA"
Marilyn Young, Presiding
Invocation
Virginia Wells
Presentation of Gavel
Marilyn Young
Acceptance
Dorothy Nunemaker
Invitation to 1980 Convention

YOU'VE GOT TO BE KIDDING!

HOME LOANS

*up to \$450,000.**



"When you've found your dream house,
MAPS has the mortgage money."

THE MUTUAL ASSOCIATION FOR PROFESSIONAL SERVICES

Provides Home Mortgage Loans For It's Members

\$100,000 and Up

ANOTHER **MAPS** SERVICE

CALL LLOYD CONRAD
REGIONAL MAPS OFFICE
SUITE 750 FOURTH FINANCIAL CENTER
WICHITA, KANSAS 67202
316 - 263-1208

* OR MORE.

When the indications surface...

Net wt 1 oz

Net wt 1/2 oz

Net wt 1/32 oz
(approx)

Net wt 1 oz

NEOSPORIN
OINTMENT

POLYMYXIN B-BACITRACIN-
NEOMYCIN
TOPICAL ANTIBACTERIAL

Net wt 1/2 oz

NEOSPORIN
OINTMENT

Net wt. 1/32 oz (approx.)
NEOSPORIN
POLYMYXIN B-BACI
TOPICAL ANTI

NEOSPORIN[®] Ointment

(Polymyxin B-Bacitracin-Neomycin)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Each gram contains Aerosporin[®] (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), special white petrolatum qs, in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: *Therapeutically*, (as an adjunct to systemic therapy when indicated), for topical infections, primary or secondary, due to susceptible organisms, as in: infected burns, skin grafts, surgical incisions, otitis externa, primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia); secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis); traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically*, the

ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components. Do not use in the eyes or in the external ear canal if the eardrum is perforated.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control

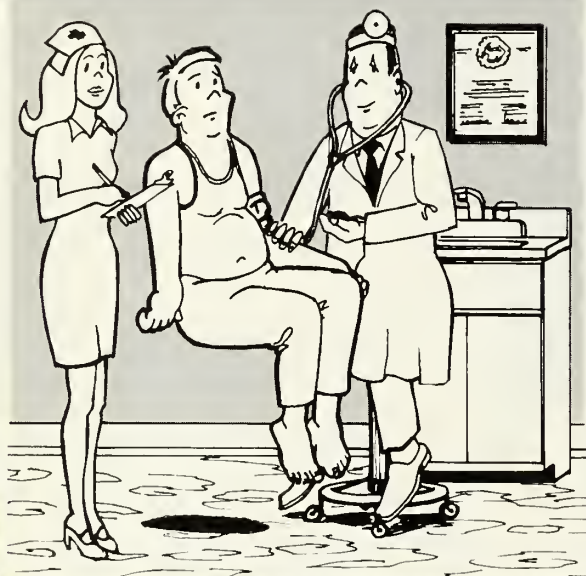
secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching, it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

Something Missing?



Keeping Patients Comfortable...

When your patient is most relaxed . . . you are most effective.

Patient comfort, along with your comfort, are prime considerations in this examination table.

Places patients in the positions best for your work, with least discomfort for you.

Whether you are setting up your first office, or are ready to re-equip . . . whether you lease or buy, with time plans available . . . let Goetze-Niemer's helpful professionals work with you.

GOETZE-NIEMER CO.

P.O. Box 136 — 1701 Brooklyn / Kansas City, MO 64141
Phone: 816-231-1900

HOSPITAL AND SURGICAL SUPPLIES—SINCE 1884

Announcing the Opening of HUAMAN PATHOLOGY LABORATORY TOPEKA KANSAS

Antonio Huaman, M.D., Director

Complete services and consultation for Anatomic, Oncologic, Forensic, and Radioisotopic Pathology and Cytology for physicians' offices and hospitals, effective September 1, 1979.

Direct inquiries to:

Antonio Huaman, M.D.
Continental Medical Building, Suite 5
631 S.W. Horne Street
Topeka, KS 66606



Dyazide[®]

Each capsule contains 50 mg. of Dyrenium[®] (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Makes Sense in Hypertension^{*}

Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

*** Warning**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spiro-lactone is used concomitantly, determine serum K⁺ frequently; both can cause K⁺ retention and elevated serum K⁺. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
a SmithKline company

Carolina, P.R. 00630

**When painful spasm
is the presenting
symptom...**



in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

“The correlation of spasm relief and drug given was excellent.”

*This drug has been classified “probably” effective in treating functional bowel/irritable bowel syndrome.
†See Warnings, Precautions and Adverse Reactions.
See following page for prescribing information.

Reference:
King, J.C. and Starkman, N.M.; Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence; suppression of lactation; constipation, bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSAGE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg: *Adults:* 1 tablet three or four times daily. Bentyl Injection: *Adults:* 2 ml (20 mg) every four to six hours intramuscularly only. **NOT FOR INTRAVENOUS USE.** **MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanechol chloride USP) should be used.

Product Information as of October, 1978.

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Decatur, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.

Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

HEALTH CENTRAL NEEDS FAMILY PRACTITIONERS INTERNISTS OB/GYN SPECIALISTS PEDIATRICIANS

A federally-qualified, staff model health maintenance organization opening January, 1979.

Nebraska's capital city of 200,000, home of the University of Nebraska.

This represents a ground floor opportunity to practice under ideal conditions in a modern new facility and three excellent hospitals in the community.

Salary commensurate with experience.

Liberal fringe benefit package.

Malpractice insurance paid.

Relocation expenses paid.

Send curriculum vitae, including salary requirements to:

JOHN L. LUCAS, M.D.

Medical Director

HEALTH CENTRAL

17th & N Street

Lincoln, NE 68508

For immediate attention, call: (402) 475-7000

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.

1009 McGee St.

KANSAS CITY, MO.

VI 2-4750

House of Delegates

Holiday Inn-Holidome

FRIDAY—MAY 4

7:30 Registration of Delegates

9:00 First Session, Regency I & II

SUNDAY — MAY 6

7:30 Registration of Delegates

9:00 Second Session, Regency I & II

**Council Meeting and Luncheon at Conclusion of
House of Delegates, Hawaiian Room**

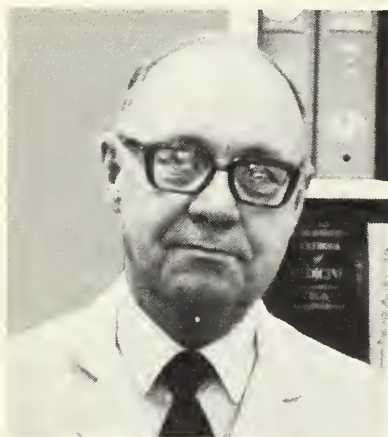
Reference Committee

FRIDAY, MAY 4—2:00 P.M.

Regency I

"THE PHYSICIAN IS A DECISION MAKER, AND ALMOST EVERY DECISION HE MAKES COSTS OR SAVES MONEY."

—Dr. William Felts, Past President,
American Society of Internal Medicine



More and more physicians today are beginning to realize the extent of the economic influence they have, and are finding ways of holding costs down.

A number of studies show that the more physicians *know* about costs, the more they try to *reduce* them.* And this reduction can be done without reducing the quality of care to the patient.

How are they doing this? As a start they have become thoroughly familiar with the costs they incur on behalf of their patients. They know how much an X-ray costs, how much their hospital charges for routine lab tests. They're requesting copies of patients' hospital bills. And asking their hospitals to print the charges for diagnostic tests right on the order sheet.

What else are physicians doing? Minimizing their patients' hospital stays, whenever possible. Reevaluating routine admissions procedures. Questioning the real need of the diagnostic tests they order for their patients. Avoiding duplicate testing. Trying to discourage their patients' demands for unnecessary medication, treatment or hospitalization. Compiling daily logs of their medical decisions and what they cost. And more.

More physicians today realize what a tough problem we're all faced with. They know this is a challenge for medicine. And that physicians are in the best position to deal with and solve the problem.

*PATIENT CARE Magazine—Outlook 1977, "Face-Off: Cost Containment vs. Chaos," January 1, 1977

Lyle CB, et al. "Practice habits in a group of eight internists," ANNALS OF INTERNAL MEDICINE 84 (May 1976), 594-601.

Schroeder SA, et al. "Use of laboratory tests and pharmaceuticals: variation among physicians and effect of cost audit on subsequent use," JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION 225 (Aug. 20, 1973), 969-73.



Blue Cross and Blue Shield
of Kansas



***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

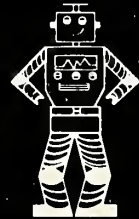
With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; **everything in order — accurately!**

Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215 • (913) 492-8805
P.O. Box 1441, Wichita, Kansas 67201 • (316) 261-5500

*"Let
MAC
do it"*



Obviously we don't have
branches everywhere.

But we have them
where
they count.



Topeka • KC • Wichita • St. Louis • Tulsa

[illegible]

Telephone: (Area Code 913) 381-4222

The Kansas Medical Society Auxiliary

*54th Annual Convention, Holiday Inn-Holidome
and Hutchinson Hospital, Hutchinson*

THURSDAY, MAY 3

- 8:00-11:00** REGISTRATION—RESERVATIONS
Holidome Lobby
Ladies sports events
- 7:30** EVENING BUFFET
Prairie Dunes Country Club
Social hour will begin at 6:30 p.m. Everyone
is invited to attend this function.

FRIDAY, MAY 4

- 9:00** REGISTRATION—RESERVATIONS
Holidome Lobby
- 10:00** PRE-CONVENTION BOARD OF DIRECTORS
MEETING
Hutchinson Hospital Auditorium
*Mrs. William H. Crouch, Topeka,
President
The Kansas Medical Society Auxiliary
Presiding*
- AMA-ERF will be located in the Hutchinson
Hospital and will be open throughout the
convention except during special events.
- 12:30** LUNCHEON AL FRESCO
Hutchinson Hospital Patio
- 1:30** GENERAL SESSION
Hutchinson Hospital Auditorium
Mrs. William H. Crouch, Presiding
- 7:30** DINNER-DANCE-CONCERT
Holidome Regency Ballroom
Social Hour will begin at 6:30 (cash bar).
Dinner will be served at 7:30, followed by a
Jazz concert and dancing.

SATURDAY, MAY 5

- 7:30** PAST PRESIDENTS' BREAKFAST
Hutchinson Hospital Board Room
- 9:00** GENERAL SESSION
Hutchinson Hospital Auditorium
Mrs. William H. Crouch, Presiding
- 12:30** PUNCHBOWL AND INSTALLATION
LUNCHEON
Paganica Country Club
Mrs. William H. Crouch, Presiding
- 3:00** POST-CONVENTION BOARD MEETING
All new board members, county presidents,
and presidents-elect are urged to attend.
- 5:30** KU ALUMNI RECEPTION FOR PHYSICIANS
AND SPOUSES
Holidome
- 7:00** ANNUAL PRESIDENT'S BANQUET
Holidome Regency Ballroom

SUNDAY, MAY 6

- 7:30** EARLY BIRD BREAKFAST
Holidome

Pre-Registration Is Essential

Because of limitations of time and space, your
reservation must be received by May 1. Please be
specific as to the events and the number of tickets
desired. Include your check, payable to: Mrs. Dan
C. Foss, and address the reservations to her at 800
Loch Lommond, Hutchinson, KS 67501.

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	(913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission ..	(913) 362-4040
Roy Neil, M.D., Hays	(913) 628-3215
George M. Penn, M.D., Topeka	(913) 234-9566
Ivan Rhodes, M.D., Wichita	(316) 685-1291
Alex Scott, M.D., Junction City	(913) 238-2518
M. C. Spencer, M.D., Topeka	(913) 234-3451
Max Teare, M.D., Garden City	(316) 276-7689
Kermit Wedel, M.D., Minneapolis	(913) 392-2144
Kansas Medical Society, Topeka	(913) 235-2383/235-3619

DINNER CONCERT MAY 4, 1979



THE HUTCHINSON COMMUNITY COLLEGE JAZZ BAND NUMBER ONE

Both jazz bands at the college are scholarship programs, and musicians are recruited from throughout Kansas.

The group attracted national recognition last year when they were the only jazz band from the college ranks invited to perform at the National Music Educators Meeting in Chicago.

Bryce Luty is director of the program.

The Kansas Foundation for Medical Care, Inc. (KFMC), Topeka, is seeking to fill the half-time position of Medical Director of the KFMC.

To obtain a Position Prospectus, address a written request to:

**SELECTION COMMITTEE
KANSAS FOUNDATION FOR MEDICAL CARE
1263 TOPEKA AVENUE
TOPEKA, KANSAS 66612**

All requests will be handled in a confidential manner.

IDENTIFICATION AND MOTIVATION OF THE IMPAIRED PHYSICIAN

a workshop presented by

**THE IMPAIRED PHYSICIAN PROGRAM
of the
KANSAS MEDICAL SOCIETY**

**Saturday
April 28, 1979**

**Tower Building
Menninger West Campus**

8:30 AM - 5:00 PM

As an organization accredited for continuing medical education, the Kansas Medical Society designates this continuing medical activity as meeting the criteria for 6 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

Additional information available from the KMS office (913-235-2383).

Welcome to Hutchinson

The physicians and auxiliary of the Reno County Medical Society are most honored and pleased to serve as the host of the 120th Annual Meeting of the Kansas Medical Society, May 3-6, 1979.

The Kansas Medical Society meeting was last held in Hutchinson in 1965. After a delay of 14 years, it is again our distinct pleasure to be your host and to offer you, the Councilors, Delegates, Members, Spouses and Families, our warm welcome to Hutchinson.

Please call on our County Staff to assist you in maintaining a pleasant visit.

James W. Shaw, Jr., M.D., President
Reno County Medical Society

Distinguished Speakers



THOMAS J. ANTLFINGER, M.D.

Dr. Antlfinger, 36, was born in Milwaukee and was graduated from Marquette Medical School (now Medical College of Wisconsin) in 1967. Following internship in Los Angeles, he served anesthesia residencies at the Mayo Clinic and Bethesda Naval Hospital. After three years in the private practice of anesthesia, he returned to the Mayo Clinic to complete a diagnostic radiology fellowship.

Since July 1976, Dr. Antlfinger has been in the private practice of radiology in Hutchinson. He is a member of various professional organizations.

Dr. Antlfinger's presentation during "A Day of Clinical Cardiology" will feature a slide presentation. His topic will be *Cardiac Radiology: Getting the Most from the Chest X-ray, Cardiac Fluoroscopy, and Barium Swallow.*



DONALD A. BARNHORST, M.D.

Dr. Barnhorst is an Indiana native born in 1937. He was graduated from St. Louis University School of Medicine in 1963. He served an internship and residency at St. Louis University Hospital, and received special training at St. Louis University in the graduate school Department of Biochemistry. He also served a Fellowship in cardiovascular surgery at the Mayo Clinic.

He has filled various positions in the surgical field, and since 1976 has been professor of surgery and Chief, Section of Cardiothoracic Surgery, at UKSM-Kansas City. He has written extensively for the medical journals.

Dr. Barnhorst will speak on *The Surgical Therapy of Ischemic Heart Disease* during "A Day of Clinical Cardiology."

DENNIS CARPER

(No photograph available)

A Kansan, Mr. Carper attended primary schools in Halstead and Kansas City, and graduated from Newton High School as an honor student and student body president in 1971. At Kansas State University he studied composition, piano and french horn, also pursuing a second major in English. He was active in student government, chairing the finance committee.

Over-commitment, disillusionment, and a number of other common college problems complicated his sophomore year. Members of the Unification Church — who identified themselves as the “unified family,” an interdenominational Christian young people’s movement — persuaded him to join, and he worked as a fund raiser, lecturer, center director, and singer-arranger. After 2½ years of trying to understand and reason with him, Mr. Carper’s parents contacted Ted Patrick for a deprogramming. Since leaving the Unification Church, he has married and returned to his study of jazz and “straight” music. He will graduate from Bethel College in Newton this May with a Bachelor of Arts in music composition, certified to teach secondary vocal and instrumental music.

Mr. Carper will speak at the Sunday “Early Bird” Breakfast on the subject, “An Insider’s Look at Totalitarian Religious Movements.” Some characteristics of cults and mind control will be outlined, and some means of dealing with the phenomenon as it affects the lives of the participants and their loved ones suggested. Anecdotes from personal experience, both in the Unification Church and in deprogramming, will be related. A question and answer session will follow.



MARVIN DUNN, M.D.

Born in Topeka in 1927, Dr. Dunn was graduated from the University of Kansas School of Medicine in 1954. Following internship in California and residency at UKSM, he joined the faculty at the latter and presently holds the position of Director, Division of Cardiovascular Diseases. He has been certified by the American Board of Internal Medicine and the Subspecialty Board of Cardiovascular Disease.

Dr. Dunn has been active in professional associations and has received numerous honors and awards, including the Franklin E. Murphy Distinguished Professorship in Cardiology. He has also been involved in community service. His extensive writings on cardiovascular topics have appeared in many medical journals; he has also served in an editorial capacity for *American College of Cardiology*, *American Journal of Cardiology*, *Annals of Internal Medicine*, and *Chest*.

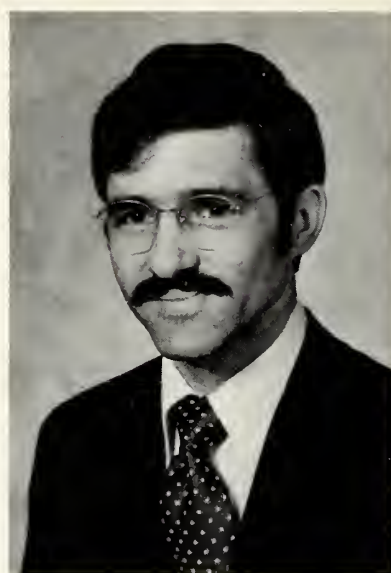
Dr. Dunn’s topics for “A Day of Clinical Cardiology” are *Coronary Arteriography Indications: Risks – Benefits* and *Diagnostic Work-up and Therapeutic Approach to Recalcitrant Congestive Heart Failure*.



WALTER McClure, Ph.D.

Dr. McClure is a physicist who received his education at Yale, Florida State University, and the University of Tuebingen, West Germany. He specializes in the logistics and economics of health care delivery. He is currently vice president and director of the Health Policy Group of *Interstudy*, a research organization involved in interdisciplinary studies for policy makers. In this capacity he has conducted studies and served as consultant to a number of government agencies and various provider organizations. He has directed or participated in a number of studies relating to health care delivery. He has written and lectured extensively in the field, and has served as advisor, consultant, or board member for various related organizations.

Dr. McClure will address the Delegates Luncheon on the topic, *Private Competitive Aspects to Health Care Cost Containment*.

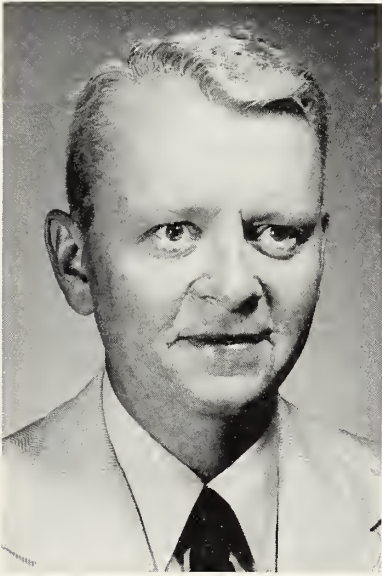


BARRY L. MURPHY, M.D.

Dr. Murphy was born in Salina in 1945, and was graduated from the University of Kansas School of Medicine in 1971. He served an internship, residency, and fellowship in cardiology, all at UKSM-Kansas City. Since 1976 he has been in private practice of Internal Medicine in Wichita.

Dr. Murphy has been certified by the American Board of Internal Medicine and the Cardiovascular Disease Subspecialty Board, and is a member of Alpha Omega Alpha honorary society. He has coauthored several articles for the medical journals.

Dr. Murphy will speak on *Echocardiography: Clinical Uses and Limitations* for the "A Day of Clinical Cardiology" program.

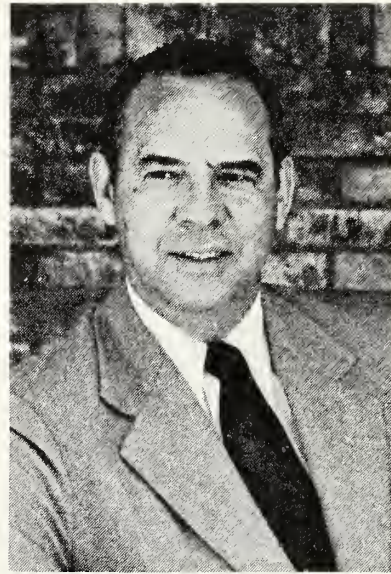


WILLIAM P. NELSON, M.D.

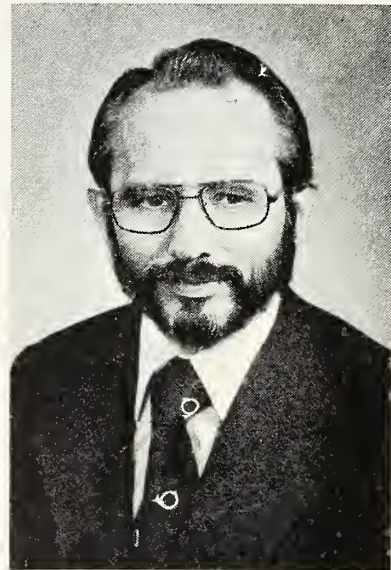
Born in Spokane, Washington, Dr. Nelson was graduated *cum laude* from Georgetown University Medical School in 1956. Following internship and residencies in both Internal Medicine and Cardiology in Texas, he was assigned to cardiology service with various Army hospitals.

Following his retirement from the Army in 1976, he spent two years on the teaching staff at the University of Nebraska Medical Center prior to accepting his present position as Professor of Medicine in the Division of Cardiovascular Diseases, UKSM-Kansas City. He is certified by the American Board of Internal Medicine and the Subspecialty Board of Cardiovascular Disease. He is a member of various professional organizations and has been the recipient of awards for instructional excellence, including the Department of Internal Medicine "Faculty Award for Excellence" at the University of Nebraska Medical Center in both 1977 and 1978. He has written extensively for the medical journals, and is coauthor of two books.

Dr. Nelson will address two sessions of "A Day of Clinical Cardiology." His topics will be *A Clinician's Approach to Cardiac Anatomy* and *The Medical Treatment of Ischemic Heart Disease*.



WARREN E. MEYER, M.D.
Wichita
President



DONALD D. GOERING
Coldwater
President-Elect

PRESIDENT'S BANQUET MAY 5, 1979



TOM HAGGAI

Doctor and Mrs. Warren E. Meyer
extend a personal invitation
to members of the Society and their guests
to attend the President's Banquet
on Saturday evening, May 5, 1979.

SATURDAY, MAY 5, 1979

HOLIDAY INN-HOLIDOME
HUTCHINSON

A timeless message delivered in the language of today; warmth, humor, understanding — these are the ingredients of Dr. Haggai's unique communication with his varied audiences.

Known to millions through his daily radio show, "Values For Better Living," he also is active in many areas of private enterprise and in numerous civic organizations. He has been the recipient of many honors.

His life is guided by the words of Oliver Wendell Holmes: "If you believe in great things, you may be able to make other people believe in them."

Hosts for the Meeting

Reno County Physicians Arranging the 1979 Session

GENERAL CHAIRMAN — Joseph McMullen, M.D.

PROGRAM CHAIRMAN

Jack Wortman, M.D.

SPORTS DAY

Carl Stensaas, M.D.

Robert Shears, M.D.

Jack Perkins, M.D.

Thursday, May 3, 1979

Holiday Inn – Holidome

SPORTS DAY ACTIVITIES

Prairie Dunes Country Club

RFD 5 316/662-0581

Golf	Tee off 9:30 AM to 12:00 Noon Price: \$22.00 each
------	--

Tennis 9:30 AM
Matches will be divided by age categories; Under 45
and Over 45. Price: \$10.00 each

Cash bar luncheon provided. \$2.50 each

Golf and tennis for the women may be arranged through the Medical Auxiliary.

Trap/Skeet Shooting will not be offered as there are no facilities available.

Sports Banquet for physicians and spouses

Cocktails 6:30 PM to 7:30 PM cash bar

Dinner 7:30 PM Price: \$13.00 per person

TELEPHONE NUMBER316-669-9311

Friday, May 4, 1979

Holiday Inn-Holidome

- 7:00** KANSAS FOUNDATION FOR MEDICAL CARE
Kansas I & II
- 7:30** REGISTRATION
- 9:00** FIRST HOUSE OF DELEGATES
Regency I & II
- 11:00** EAR, NOSE, THROAT SECTION
Luncheon-Meeting
Kansas II
- 11:00** KANSAS OB-GYN SOCIETY
Luncheon-Meeting
Hawaiian Room
- 12:30** DELEGATES LUNCHEON
\$6.50 per person
Regency III
Guest Speaker – Walter McClure, Ph.D.
Interstudy
- 1:00** NUCLEAR MEDICINE SECTION
Sico Room
- 2:00** REFERENCE COMMITTEE
Regency I
- 4:00** KAMPAC HOSPITALITY SUITE
Hawaiian Room (Everyone invited)
- 6:30** COCKTAILS
Cash bar
- 7:30** DINNER
Regency I, II, III
\$12.50 per person

Entertainment

Hutchinson Community College No. 1 Jazz Band

This group was nationally recognized last year when they were the only jazz band from the college ranks invited to perform at the National Music Educators Meeting in Chicago.

There are two jazz bands at the college — both are scholarship programs. The musicians are recruited from the state of Kansas.

Bryce Luty is director of the program.

TELEPHONE NUMBER 316-669-9311

Saturday, May 5, 1979

Holiday Inn-Holidome

7:30 REGISTRATION
7:30 PAST PRESIDENTS BREAKFAST
Kansas I
A Day of Clinical Cardiology
Registration fee \$25.00 (luncheon included)
Program Objectives
After attending this program, the participants will be able to:

1. Review the gross anatomy of the heart as it relates to clinical diagnosis in heart disease.
2. Appreciate the use of plain x-ray films, flouros-copy and barium swallow in the assessment of chamber size, overall cardiac size, valvular calcification, and pulmonary vascularity.
3. Recognize the utility of echocardiograms in val-vular cardiac lesions; hypertrophic cardio-myopathy, pericardial effusion and assessment of left ventricular function.
4. Delineate the techniques, indications for, risks of, and complications of coronary arteriography.
5. List a variety of cardiorespiratory problems pro-ducing resistant CHF and outline a diagnostic approach including useful pharmacologic inter-vention.
6. Identify a systematic approach to ischemic heart disease using risk factor modification; oral, sub-lingual and topical nitrites; Beta blocking agents, anticoagulants; and agents which reduce platelet adhesiveness.
7. Review the status of coronary artery revasculari-zation including indications for surgery; patient selection; intraoperative and postoperative com-lications and therapeutic benefits.

As an organization accredited for continuing medical education, the University of Kansas School of Medicine-Wichita designates this continuing medi-cal education activity as meeting the criteria for 6 credit hours in Category I of the Physician's Recog-nition Award of the American Medical Association.

- 8:45 WELCOMING REMARKS**
James Shaw, M.D.
President Reno County Medical Society
Moderator: Jack Wortman, M.D.
- 9:00 A CLINICIAN'S APPROACH TO CARDIAC ANATOMY**
William Nelson, M.D.
- 9:40 CARDIAC RADIOLOGY — GETTING THE MOST FROM THE CHEST X-RAY, CAR-DIAC FLOUROSCOPY & BARIUM SWAL-LOW**
Thomas Antlfinger, M.D.
- 10:20 BREAK**
- 10:35 CORONARY ARTERIOGRAPHY INDICATIONS RISKS — BENEFITS**
Marvin Dunn, M.D.
- 11:20 BASIC ECHOCARDIOGRAPHY FOR THE PRI-MARY CARE PHYSICIAN**
Barry Murphy, M.D.
- 12:00 LUNCH**
- 12:00 KANSAS PSYCHIATRIC ASSOCIATION LUNCHEON MEETING**
Kansas I & II
- 12:00 KANSAS ANESTHESIOLOGY SOCIETY LUNCHEON MEETING**
Hawaiian Room
- 2:00 DIAGNOSTIC WORK-UP AND THERAPEUTIC APPROACH TO RECALCITRANT CON-GESTIVE HEART FAILURE**
Marvin Dunn, M.D.
- 2:40 THE MEDICAL TREATMENT OF ISCHEMIC HEART DISEASE**
William Nelson, M.D.
- 3:20 BREAK**
- 3:35 THE SURGICAL THERAPY OF ISCHEMIC HEART DISEASE**
Don Barnhorst, M.D.
- 4:20 DIALOGUE & DEBATE**
Entire Faculty
- 5:30 RECEPTION FOR PHYSICIANS & SPOUSES**
CASH BAR
Garden Area & Sico
- 7:00 ANNUAL PRESIDENTS BANQUET**
Entertainment by Dr. Thomas Haggai
Price: \$16.50 per person
Regency I, II, III

TELEPHONE NUMBER 316-669-9311

Sunday, May 6, 1979

Holiday Inn-Holidome

7:30 REGISTRATION

7:30 EARLY BIRD BREAKFAST

Regency III

*Speaker: Dennis Carper,
Unification Church*

Price: \$4.75 per person

9:00 SECOND HOUSE OF DELEGATES

Regency I & II

12:30 KANSAS ALLERGY SOCIETY

Luncheon-Meeting

Kansas I

12:30 KANSAS RADIOLOGY SOCIETY

Luncheon-Meeting

Regency III

1:00 COUNCIL LUNCHEON-MEETING

Hawaiian Room

Educational Grants

The Kansas Medical Society is grateful for the convention program grants received from:

Abbott Laboratories
Chicago, Illinois

Blue Cross-Blue Shield
Topeka, Kansas

Bristol Laboratories
Syracuse, New York

Cooper Laboratories
Parsippany, New Jersey

Group Plans Agency, Inc.
Kansas City, Missouri

Mead Johnson and Company
Evansville, Indiana

The Medical Protective Company
Fort Wayne, Indiana

Merck Sharp & Dohme
Shawnee Mission, Kansas

Munns Medical Supply
Topeka, Kansas

Norwich-Eaton Pharmaceuticals
Norwich, New York

A. H. Robins Company
Richmond, Virginia

William H. Rorer, Inc.
Fort Washington, Pennsylvania

Smith Kline and French Laboratories
Philadelphia, Pennsylvania

Resolutions

To Be Introduced at First House of Delegates, May 4, 1979

REFERENCE COMMITTEE

Ivan E. Rhodes, M.D., Wichita, *Chairman*
Donald E. Beahm, M.D., Great Bend
Franklin G. Bichlmeier, M.D., Kansas City
Herbert Fransen, M.D., Newton
Millard C. Spencer, M.D., Topeka

An asterisk following the resolution number indicates that those resolutions require a change in the Constitution and By-Laws, and a two-thirds majority vote of the House of Delegates is needed.

RESOLUTION NO. 79-

(Submitted by the Executive Committee)

General Fund Check Authorization

1 WHEREAS, The bylaws of the Kansas Medi-
2 cal Society require general fund checks to be
3 signed by the Treasurer and countersigned by
4 the President and Secretary; and
5 WHEREAS, Presently only the Treasurer signs
6 the general fund checks, therefore be it
7 *Resolved*, That the Bylaws Committee be
8 directed to draft appropriate changes to the
9 bylaws providing that the Executive Director of
10 the Kansas Medical Society be authorized to
11 sign general fund checks with appropriate au-
12 thorization from the Treasurer and that the
13 Executive Director be bonded in an appropriate
14 amount.

RESOLUTION NO. 79-

(Submitted by the Executive Committee)

AAMA 1980 Meeting

1 WHEREAS, American Association of Medical
2 Assistants (AAMA) and its affiliated state and
3 local chapters are comprised of employees of
4 actively practicing physicians; and
5 WHEREAS, The purpose of membership of
6 this organization is to serve the physician and
7 the patient by furthering education of the Medi-
8 cal Assistant; and
9 WHEREAS, The Kansas Medical Society sup-
10 ported and encouraged the establishment of
11 AAMA, which organization was initiated by

12 members of the Kansas Medical Assistants So-
13 ciety in Kansas City, in 1955; and

14 WHEREAS, In commemoration of the 25th
15 anniversary of its inception, the 1980 annual
16 session of AAMA will be hosted by the Kansas
17 Medical Assistants Society and held in Kansas
18 City; therefore be it

19 *Resolved*, That the Kansas Medical Society
20 recognize and congratulate the American As-
21 sociation of Medical Assistants on its efforts to
22 provide a continuous professional educational
23 program for its membership; and be it further

24 *Resolved*, That the Kansas Medical Society
25 congratulate the members of the Kansas Medi-
26 cal Assistants Society on their accom-
27 plishments at the national level; and be it further

28 *Resolved*, That the Kansas Medical Society
29 support the 1980 annual convention of the
30 American Association of Medical Assistants
31 with assistance in providing a suitable speaker.

RESOLUTION NO. 79-

*(Submitted by Millard C. Spencer, M.D. and
William R. Allen, M.D.)*

Medical Ethics and Chiropractic

1 *Resolved*, That the Kansas Medical Society
2 reaffirms the current statement of policy
3 adopted by the House of Delegates of the AMA
4 in 1966, to wit:

5 It is the position of the medical profession that
6 chiropractic is an unscientific cult whose practition-
7 ers lack the necessary training and background to
8 diagnose and treat human disease. Chiropractic con-
9 stitutes a hazard to rational health care in the United
10 States because of the substandard and unscientific
11 education of its practitioners and their rigid adher-
12 ence to an irrational, unscientific approach to dis-
13 ease causation; be it further

14 *Resolved*, That the Kansas Medical Society
15 reaffirms the terms of Section 3, AMA
16 Principles of Medical Ethics, which states, in
17 part:

18 A physician should practice a method of healing
19 founded on a scientific basis; and he should not
20 voluntarily associate professionally with anyone
21 who violates this principle; be it further

Resolved, That the Kansas Medical Society deems that the acceptance of the referral of a person by a physician from another person purporting to offer services to people in the area of health care constitutes a "professional association" under the terms of the above; be it further

Resolved, That the Kansas Medical Society reaffirms the AMA Bylaws, Chapter 20, which states, in part:

Memorials, resolutions or opinions of any character whatever which conflict with the policies of the House of Delegates shall not be issued in the name of the American Medical Association; be it further

Resolved, That the Kansas Medical Society request through its delegates to the AMA House of Delegates that the Board of Trustees of the AMA exert all possible efforts to withdraw the offer of settlement of the suit in Federal Court in Philadelphia, regarding the relationship between chiropractors, hospitals, and certain referral-based physicians, on the grounds that settlement is not in the best interest of patients, hospitals, or the future of medical practice; recognition is given to specific objections detailed by the American Academy of Orthopaedic Surgeons, American College of Physicians, American College of Surgeons, American College of Radiology, on behalf of their respective members; be it further

Resolved, That the Judicial Council of the AMA be strongly urged to withdraw its tentative interpretation of Principle 3, specifically paragraph 3.70 as enunciated in 1977, now under study by a special ad hoc committee of the AMA House of Delegates; and be it further

Resolved, That this resolution in its spirit and content shall be placed before the AMA House of Delegates at its special meeting July 22-26, 1979, and that the Kansas delegates are hereby instructed to support the intent of the foregoing resolutions with vigor at that meeting.

RESOLUTION NO. 79-

(Submitted by the Executive Committee)

AMA Dues Billing and Remittance Criteria

WHEREAS, The American Medical Association is strengthening its membership recruitment efforts; and

WHEREAS, The American Medical Association

and the American Association of Medical Society Executives studied and drafted jointly, criteria for dues billing and remittance; and

WHEREAS, The Kansas Medical Society is interested in assisting the American Medical Association in its membership recruitment efforts; therefore be it

Resolved, That the Kansas Medical Society adopt the following criteria for AMA dues billing and remittance:

1. Each society electing to bill for AMA dues should give written notice to the AMA of its intention to bill according to these established criteria. It is understood that in those societies which do not elect to accept the criteria, then AMA will bill its members directly and so advise these societies in advance.

2. Annually, each participating society should render the first billing for AMA dues by December 1.

3. The societies should include AMA dues on every regular billing of their society members and should solicit at least one more time those who have paid county and state dues but not AMA dues.

4. Billing societies should place the AMA figure in the same column on the billing form as county and state dues and the AMA dues figure should be included in any dues total on the bill.

5. Billing societies should include a message promoting federation membership in each billing and each delinquency notice. The AMA will prepare and make available such promotional messages unless the billing society chooses to prepare its own.

6. Each society receiving AMA dues should forward AMA dues and a list of the payers of the dues within 30 days of receipt of the dues. All dues collected within the last 30 days prior to the AMA delinquency date should be forwarded in time to reach the AMA prior to that delinquency date.

7. Each society billing for AMA dues should send the AMA a report of billing schedules, a sample of each billing form and a promotional message, and the number of physicians billed for AMA membership at each billing.

8. Where these criteria are met, there should be reimbursement by the AMA to state associations for equitable, shared distribution to any component societies involved in the billing process, on the following formula basis:

2.0% of dues received by the AMA no later than January 15th;

59 1.5% of dues received by the AMA no
60 later than February 15th;
61 1.0% of dues received by the AMA no
62 later than March 15th; and
63 0.5% of dues received by the AMA after
64 March 15th.
65 Reimbursement by the AMA on Criterion No. 8
66 should be made to state associations within 30
67 days after receipt by the AMA of AMA dues.

RESOLUTION NO. 79-

(Submitted by Warren E. Meyer, M.D.)

Medical Care Costs

1 WHEREAS, Increases in the cost of medical
2 care are real and continuing, causing concern
3 by individuals, families, business, government
4 and physicians; and

5 WHEREAS, Much of the increase in cost is
6 caused by new technology and treatment
7 methods which result in better care, prolonged
8 life or a better quality of life; and

9 WHEREAS, Other important factors causing
10 the increases in costs are government regu-
11 lations, higher labor, energy and malpractice
12 costs and general inflation; and

13 WHEREAS, Tom E. Nesbitt, M.D., President
14 of the American Medical Association, called on
15 physicians in his inaugural address to use re-
16 straint in their fee increases; therefore be it

17 *Resolved*, That the Kansas Medical Society
18 endorse the call by AMA President Tom E.
19 Nesbitt, M.D., for physicians to help moderate
20 increases in medical care costs by using appro-
21 priate restraints to keep fee increases more
22 nearly in line with the annual increase in cost of
23 living.

RESOLUTION NO. 79-

(Submitted by Warren E. Meyer, M.D.)

Hospital Rate Review

1 WHEREAS, The legislature will look at pro-
2 spective hospital rate and budget review during
3 the coming legislative session; and

4 WHEREAS, There are a variety of different
5 state mechanisms already in existence; some
6 voluntary (Indiana), some legislated (Mary-
7 land, Washington State) with some questions
8 about amounts actually saved, and some whose
9 power is being challenged in the courts; and

10 WHEREAS, The voluntary effort on cost
11 containment has shown its ability to restrain the

12 amount of increase in health care costs and has
13 the approval of physicians, hospitals and gov-
14 ernment; and

15 WHEREAS, The voluntary cost containment
16 effort encompasses a much wider scope than the
17 hospital rates in its combined effort; therefore
18 be it

19 *Resolved*, That the Kansas Medical Society
20 petition the Kansas legislature to defer action on
21 any legislated hospital rate review program
22 pending further information on the continuing
23 effectiveness of the voluntary cost containment
24 effort.

RESOLUTION NO. 79-

(Submitted by the Executive Committee)

KMS National Health Insurance Policy Statement

Resolved, That the Kansas Medical Society House
of Delegates adopts the following policy statement:

1 The access to quality medical care at a rea-
2 sonable cost is an objective that physicians,
3 other health care providers, patients and gov-
4 ernment all share. However, none of the major
5 proposals before Congress at this time represent
6 a feasible method of achieving that objective.
7 All of the proposals require the establishment of
8 a massive bureaucratic regulatory mechanism,
9 which would ultimately inflate the cost of
10 health care, and most importantly waste valu-
11 able financial resources on large segments of
12 the population that are not substantially at risk
13 or need.

14 Any Congressional plan to mandate health
15 insurance coverage for the general population
16 should be limited to the following elements:

17 1. The approach taken for comprehensive
18 health insurance should be selective, and cover
19 only the population that does not have adequate
20 and basic insurance coverage, but both *needs*
21 and *wants* it. Coverage should be made avail-
22 able, not mandated.

23 2. The program for the rest of the population
24 should be geared to cover expenses for cata-
25 strophic illnesses only, not basic and com-
26 prehensive health insurance.

27 3. The program should guarantee freedom of
28 choice of physician, patient and insurance
29 coverage. The experience and expertise of the
30 private sector should be utilized to the max-
31 imum extent possible.

32 4. The program should be decentralized in

33 administration and financing, involving states
34 extensively in determining scope, administra-
35 tion and policy.

36 5. The program must maintain the pluralistic
37 health delivery system.

38 The Kansas Medical Society is opposed to
39 the approaches taken in all the major bills be-
40 fore Congress now, including the AMA bill,
41 HR-1818. However, if deemed necessary, the
42 Kansas Medical Society would not oppose in-
43 troduction of an AMA bill which contains the
44 basic elements described above.

RESOLUTION NO. 79-

(Submitted by the Executive Committee)

Prospective Rate and Budget Review

Resolved, That the Kansas Medical Society House of Delegates adopts the following policy statement:

1 The concept of prospective review of the
2 various factors that make up the daily hospital
3 charge cannot be disputed as a public education
4 measure, and will help to point out areas where
5 there may be ways of reducing the rate of cost
6 increases. Realistically, it cannot and should
7 not be expected that rate review in and of itself
8 will reduce total costs in these days of inflation.
9 It can only be expected to hold down the rate of
10 increase. However, the issue is much more
11 complex than it first appears. Whether a uni-
12 form method of budget and rate review can be
13 found that would be fair and equitable to all
14 hospitals in Kansas is open to question. The
15 hospitals in Kansas vary from the less-than-25
16 bed hospitals in rural areas to the tertiary care
17 institutions with teaching, educational and re-
18 search programs in the urban areas. The cost
19 problems are simply not the same.

20 If a prospective hospital rate review program
21 is to be enacted in Kansas it should contain the
22 following points:

23 1. The agency responsible for the program
24 should not be a part of the state government
25 bureaucracy. Rather, an independent, non-
26 governmental commission and staff funded
27 through fees paid by the hospitals should have
28 primary responsibility for the program, with
29 broad and flexible state overview through
30 statutory law and legislative review. An appeals
31 process with appropriate safeguards should be
32 guaranteed.

33 2. Hospitals of similar size and service
34 capabilities should be grouped for the purpose

35 of comparing statistical and operational studies.
36 A small community hospital should not be
37 grouped with a large teaching hospital for rate
38 and budget review purposes.

39 3. A uniform method of cost reporting should
40 be established, recognizing any necessary dif-
41 ferences in each peer grouping of hospitals.

42 A rate review program should be flexible
43 enough to recognize and allow for legitimate
44 growth of facilities, services offered and neces-
45 sary cost increases without sacrificing the qual-
46 ity of care rendered within the institution. The
47 Kansas Medical Society is opposed to creation
48 of a program based on a public utility concept
49 proposed by some. It is both unwise and un-
50 workable, and should be avoided. An inequita-
51 ble rate review program that does not recognize
52 the differences in rural and urban institutional
53 needs will adversely affect the provision of
54 hospital services to Kansans.

RESOLUTION NO. 79-

(Submitted by Lewis G. Allen, M.D.)

KMS National Health Insurance Policy Statement

1 *Resolved*, That the KMS adopt the following
2 policy statement:

3 1. The access to quality medical care at a
4 reasonable cost is an objective that physicians,
5 other health care providers, patients and gov-
6 ernment all share. However, none of the major
7 proposals before Congress at this time represent
8 a feasible method of achieving that objective.
9 All of the proposals require the establishment of
10 a massive bureaucratic regulatory mechanism,
11 which would ultimately inflate the cost of
12 health care, and most importantly waste valu-
13 able financial resources on large segments of
14 the population that are not substantially at risk
15 or need.

16 2. Any Congressional plan to make available
17 health insurance coverage for the general
18 population should be limited by and in con-
19 formity with the *United States Constitution*,
20 especially at its Article 1, Section 10, and its 9th
21 and 10th Amendments.

22 3. Coverage should not be mandated.

23 4. The program should guarantee freedom of
24 choice of physician, patient and insurance
25 coverage. The experience and expertise of the
26 private sector should be utilized to the max-
27 imum extent possible.

(Continued on page 220)

Councilor Reports

Activities in the Council Districts of Kansas

DISTRICT 1

During the 1978-79 year we witnessed the continuing influx of physicians into the northeast Kansas area. Although some of the new physicians in northeast Kansas are not affiliated with the Kansas Medical Society, they are providing medical services, and the corporate effect is that of lessening the former critical shortage of physicians in our area. Seneca has made arrangements for two physicians to come during the next twelve months. It appears that a new physician will be locating in Marysville this summer, and at least two new physicians have been contracted to serve in Washington, Kansas, while the National Health Service Corps apparently is planning to provide two additional physicians for Washington. This bodes to make Washington, Kansas, perhaps one of the best served areas in Kansas.

We have had one death in our Council District during this year — Dr. Wayne Wallace, Sr., who died September 27, 1978. Dr. Thomas Duckett, Hiawatha, retired effective September 1, 1978.

The remainder of the progress in northeast Kansas concerns the normal continual upgrading of medical care. It is encouraging to see the quality of medical care in Kansas continually improve.

ROGER D. WARREN, M.D., *Councilor*

DISTRICT 2

The principal accomplishments of District 2 during 1978, under the presidency of Barbara P. Lukert, M.D., related to the efforts of hard-working committees attacking two problems that are guaranteed to win them few friends.

The Cost Containment Committee labored under the leadership of John O. Yulich, M.D., and actually managed to produce a set of guidelines covering cost containment in hospitals. Bolstered by such success, the Committee will devote 1979 to the problem of cost containment in physicians' offices, "... where angels fear to tread."

The Emergency Medical Care Committee, directed by Michael D. Boggan, M.D., worked assiduously during the year as well, and is also able to report sound progress. Their job is bound to be difficult because of the need to coordinate with several municipalities and two state governments.

Speaking of state lines, Wyandotte County medical leaders continue to be less than enthusiastic about developments in the structure of the regional health planning agency. The principal problem at the moment is the one we feared at the outset — that we would not have equal representation on the board. We do not mind playing tail to the Kansas City/Missouri dog, but we would prefer not to come out smelling like the nearby anatomy.

Total membership in District 2 rose from 433 to 448 during the year, with voting members increasing from 384 to 402.

ROBERT P. HUDSON, M.D., *Councilor*

DISTRICT 3

Council District 3 consists of the Johnson County Medical Society. Its activities in the past year have included acquisition of 19 new active members, with four corresponding members. This medical society continues to grow, as do the activities of organized medicine throughout the county.

We have participated in and implemented the Impaired Physician Program. The Society has endorsed and assisted in the organization of a county-wide physician radio paging system. Activities within the district have included monitoring the advent of "sponsored" Health Care Systems. The merchandising of health care services is viewed with some concern. The commercialization of medical practice serves only to disparage good medical practice and physician-patient relationship.

Other activities include: (1) Review of and conference with the principal candidates in the recent senatorial race; (2) Endorsement of the abused child program by county officials; (3) Concern over the growing number of abortions and illegitimate pregnancies in the county, which are reaching numbers that suggest, if not indicate, an existing "public health" problem; and (4) Support of CPR training with gifts of teaching devices to local hospitals and commissioning the Medical Auxiliary to provide others.

Being a border district to the state of Missouri, this area continues to be involved by, hindered with, and oppressed by a proliferating array of federal demands and regulations and contrivances, which

serve only to diminish the quality of health care services and increase its costs.

LEWIS G. ALLEN, M.D., *Councilor*

DISTRICT 4

The activities of Council District 4 included a very enjoyable visit and discussion with Dr. Warren E. Meyer, President, when he was here during the most snowy day of the year.

A sincere effort has been made to make people of this area more aware of and active in the political action committee.

G. W. POGSON, M.D., *Councilor*

DISTRICT 6

Activities in the Shawnee County Medical Society are faring well under the leadership and guidance of our president, Dan Kelly, M.D. Dan is a good leader with a pleasant wit and a sufficient supply of energy to keep things on an even keel.

We of Shawnee County had the distinct pleasure of hosting the 1978 Annual Meeting. We hope you were pleased with your reception here, and we are looking forward to a return engagement in the future.

This winter, our long standing Executive Secretary, Gary Rexford, submitted his resignation, and as you might expect, stayed on until we could find a satisfactory replacement for his position. Gary has given nine good years to Shawnee County Medical Society and has been generous in his assistance to programs developed by the Kansas Medical Society. He has helped us develop our educational arm of the Society and has become the very trusted and respected confidential friend to many of the leaders of Shawnee County Medical Society. We thank him for the time he has spent with us and wish him good fortune in the future. Byron Cook, a recent graduate of the University of Washburn School of Law, will be replacing Gary as the Executive Secretary of the Shawnee County Medical Society. Byron's credentials are excellent, and we are all looking forward to many good years' association with this very pleasant, talented young man. As he travels about the state, please acquaint yourselves with him.

The Shawnee County Medical Foundation, the educational arm of the Shawnee County Medical Society, continues to have a growing, healthy relationship with the University of Kansas School of Medicine. Under the leadership of our current president, Harry White, M.D., we hope to expand our role in carrying medical education to northeast Kan-

sas. He and his board members are working closely with our Vice-Chancellor, David Waxman, M.D., and Outreach Director, Joe Meek, M.D., in further development of quality educational programs for Topeka and northeast Kansas. During 1978, the Foundation provided residency rotations for 56 residents in internal medicine, obstetrics and gynecology, pediatrics, and general surgery. The number of residents served in each of these specialties was as follows:

Internal Medicine	43
Pediatrics	6
Obstetrics and Gynecology	6
General Surgery	1

Additionally, the Foundation continued its AMA approved grand rounds and clinical seminars programs. These programs included combined grand rounds, surgery grand rounds, pediatric grand rounds and clinical pathologic conferences, oncology conferences, neuroradiology conferences, and seminars on cardiology and infectious disease. The Foundation also co-sponsored an arthritis symposium and the educational segment of the spring meeting of the Kansas Radiologic Society. During the year, a total of 265 individual physicians participated, earning a total of 6,238 hours of AMA Category I Credit. New conferences, such as a multidisciplinary cardiovascular conference and a multidisciplinary GU conference, are on the drawing boards. After a developmental experience of these conferences has been completed, we hope that they can be certified for AMA Category I Credit to expand our certified educational experience in Shawnee County.

Our three hospitals continue to be in major expansion programs and continue to serve the expanding population of Shawnee County well. We of Shawnee County are looking forward to the Annual Meeting in Hutchinson. See you in May.

MILLARD C. SPENCER, M.D., *Councilor*

DISTRICT 8

We have three new physicians in Cowley County: Frank Collins, M.D., and Dirk Hutchinson, M.D., practice in Winfield, Girvar Singh, M.D., practices ophthalmology in Arkansas City.

Our main concern for the coming year is to avoid further government intervention. I would encourage all Kansas physicians to join the Association of American Physicians and Surgeons. This is our concentrated effort to keep medicine a free enterprise.

STEPHEN J. SMITH, M.D., *Councilor*

(Continued on page 221)

NECROLOGY REPORT

Following is a list of the members of the Kansas Medical Society whose deaths have been reported since the last meeting of the House of Delegates.

<i>Name and Address</i>	<i>Age</i>	<i>Date</i>
George L. Ashley, <i>Chanute</i>	65	May 6, 1978
Harwin J. Brown, <i>Winfield</i>	69	Feb. 1, 1979
Margaret Clark, <i>Lawrence</i>	67	July 14, 1978
Shirley E. Clark, <i>Topeka</i>	63	July 23, 1978
Truman W. Grauel, <i>Wichita</i>	37	Jan. 3, 1979
John L. Grove, <i>Newton</i>	97	Feb. 10, 1978
Thomas C. Hurst, <i>Wichita</i>	64	July 22, 1978
Paul A. Kaelson, Jr., <i>Wichita</i>	61	Dec. 24, 1978
James Marr, <i>Coffeyville</i>	57	Jan. 10, 1979
Roscoe F. Morton, <i>Arkansas City</i>	65	Oct. 30, 1978
Henry S. O'Donnell, <i>Ellsworth</i>	85	Sept. 6, 1978
Leonard F. Podrebarac, <i>Wichita</i>	54	Dec. 23, 1978
Robert K. Purves, <i>Wichita</i>	60	Jan. 6, 1979
A. K. Ratzlaff, <i>Goessel</i>	71	Feb. 7, 1978
Marion J. Renner, <i>Goodland</i>	82	July 8, 1978
Corbin E. Robison, <i>Lawrence</i>	64	Feb. 5, 1979
Charles R. Rombold, <i>Wichita</i>	79	Dec. 18, 1979
Ward W. Summerville, <i>Kansas City</i>	81	Dec. 31, 1978
Wayne O. Wallace, Sr., <i>Atchison</i>	65	Sept. 27, 1978
Ray A. West, <i>Wichita</i>	86	Dec. 9, 1978

The advertising in

THE JOURNAL

keeps you informed
and helps pay the
publishing costs!

When the local
representative calls,
tell him you saw
his company's ad in
your journal.

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



Main Bank/3433 E. Central • Wichita, Kansas 67208
Central Two/First and Hillside • Central Northwest/21st and Amidon
All Locations (316) 686-7111
MEMBER FDIC

Resolutions

(Continued from page 216)

28 5. The program should be decentralized in
29 administration and financing, involving states
30 and their private sector extensively in deter-
31 mining scope, administration and policy.

32 6. The program must maintain the pluralistic
33 health delivery system.

34 7. The Kansas Medical Society is opposed to
35 the approaches taken in all the major bills be-
36 fore Congress now, including the AMA bill,
37 HR-1818. However, if deemed necessary or
38 "politically" needed, the Kansas Medical So-
39 ciety might not oppose introduction of an AMA
40 bill which contains the *basic elements* and *con-*
41 *stitutional limitations* described above.

RESOLUTION NO. 79-

(Submitted by Warren E. Meyer, M.D.)

Chiropractic Venipuncture Privilege

1 WHEREAS, The Kansas Medical Society has
2 always held that chiropractic through its philos-
3 ophy and teaching has no need to pierce the skin
4 in diagnosis and/or treatment; and

5 WHEREAS, Repeated opinions by Attorneys
6 General of the State of Kansas have held that
7 chiropractors cannot pierce the skin; and

8 WHEREAS, There has been no proof to the
9 medical scientific community that chiroprac-
10 tors possess the fundamental background in
11 training to be able to utilize blood samples for
12 effective patient care; therefore be it

13 *Resolved*, That chiropractors *not* be granted
14 the permission to withdraw blood by ven-
15 ipuncture for diagnosis testing; and be it further

16 *Resolved*, That copies of this resolution be
17 sent to all Kansas legislators.

RESOLUTION NO. 79-

(Submitted by Warren E. Meyer, M.D.)

Second Opinion Surgical Programs

1 WHEREAS, Second Opinion programs have
2 been inaugurated by Prudential Insurance
3 Company and H.E.W. Medicare and Medicaid
4 programs as a method to reduce medical costs
5 and eliminate unnecessary surgery despite the
6 fact that there is no proof that Second Opinion
7 programs are cost effective, nor that there is
8 massive unnecessary surgery; and

(Continued on page 226)

Librax®

Each capsule contains 5 mg
chlordiazepoxide HCl and 2.5 mg clidinium Br.

**Please consult complete prescribing information, a sum-
mary of which follows:**

Indications: Based on a review of this drug by the Na-
tional Academy of Sciences—National Research Coun-
cil and/or other information, FDA has classified the in-
dications as follows:

"Possibly" effective: as adjunctive therapy in the treat-
ment of peptic ulcer and in the treatment of the irritable
bowel syndrome (irritable colon, spastic colon, mucous
colitis) and acute enterocolitis.

Final classification of the less-than-effective indications
requires further investigation.

Contraindications: Glaucoma; prostatic hypertrophy, benign
bladder neck obstruction; hypersensitivity to chlordiazepoxide
HCl and/or clidinium Br.

Warnings: Caution patients about possible combined effects
with alcohol and other CNS depressants, and against hazard-
ous occupations requiring complete mental alertness (e.g.,
operating machinery, driving). Physical and psychological
dependence rarely reported on recommended doses, but use
caution in administering Librium® (chlordiazepoxide HCl) to
known addiction-prone individuals or those who might in-
crease dosage; withdrawal symptoms (including convulsions)
reported following discontinuation of the drug.

Usage in Pregnancy: Use of minor tranquilizers dur-
ing first trimester should almost always be avoided
because of increased risk of congenital malforma-
tions as suggested in several studies. Consider
possibility of pregnancy when instituting therapy.
Advise patients to discuss therapy if they intend to
or do become pregnant.

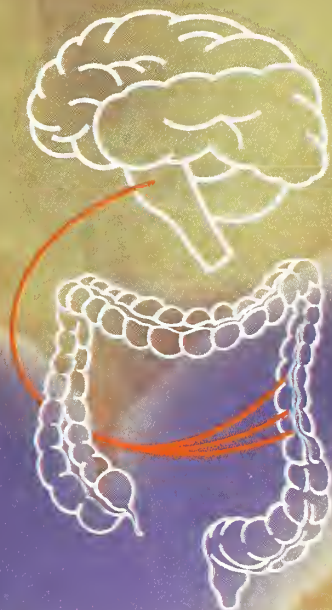
As with all anticholinergics, inhibition of lactation may occur.

Precautions: In elderly and debilitated, limit dosage to small-
est effective amount to preclude ataxia, oversedation, confu-
sion (no more than 2 capsules/day initially; increase gradually
as needed and tolerated). Though generally not rec-
ommended, if combination therapy with other psychotropics
seems indicated, carefully consider pharmacology of agents,
particularly potentiating drugs such as MAO inhibitors,
phenothiazines. Observe usual precautions in presence of
impaired renal or hepatic function. Paradoxical reactions re-
ported in psychiatric patients. Employ usual precautions in
treating anxiety states with evidence of impending depres-
sion; suicidal tendencies may be present and protective
measures necessary. Variable effects on blood coagulation
reported very rarely in patients receiving the drug and oral
anticoagulants; causal relationship not established.

Adverse Reactions: No side effects or manifestations not
seen with either compound alone reported with Librax. When
chlordiazepoxide HCl is used alone, drowsiness, ataxia, con-
fusion may occur, especially in elderly and debilitated; avoid-
able in most cases by proper dosage adjustment, but also
occasionally observed at lower dosage ranges. Syncope re-
ported in a few instances. Also encountered: isolated in-
stances of skin eruptions, edema, minor menstrual ir-
regularities, nausea and constipation, extrapyramidal symp-
toms, increased and decreased libido—all infrequent, gener-
ally controlled with dosage reduction; changes in EEG pat-
terns may appear during and after treatment; blood dys-
crasias (including agranulocytosis), jaundice, hepatic dys-
function reported occasionally with chlordiazepoxide HCl,
making periodic blood counts and liver function tests advis-
able during protracted therapy. Adverse effects reported with
Librax typical of anticholinergic agents, i.e., dryness of mouth,
blurring of vision, urinary hesitancy, constipation. Constipation
has occurred most often when Librax therapy is combined
with other spasmolytics and/or low residue diets.



Roche Products Inc.
Manati, Puerto Rico 00701



In treating irritable bowel syndrome*
Enhance your therapeutic expectations
with

Librax[®]

Each capsule contains
5 mg chlordiazepoxide HCl
and 2.5 mg clidinium Br.

antianxiety/antispasmodic/antimotility

Librax is unique among G.I. medications
in providing the specific antianxiety action of
LIBRIUM[®] (chlordiazepoxide HCl) as well as the potent
antispasmodic and antimotility actions of
QUARZAN[®] (clidinium Br) for adjunctive therapy
of irritable bowel syndrome.

ROCHE

*Librax has been evaluated as possibly effective for this indication.
Please see brief summary of prescribing information on preceding page.



The evidence of experience

Since October 1974 when Motrin® (ibuprofen) was introduced in the United States, it has been used by more than 6,000,000 patients with rheumatoid arthritis* or osteoarthritis. Rarely has an ethical pharmaceutical product been prescribed for so many patients in so short a time. In addition, more than 450 studies presenting new data related to Motrin have been published.

The 6,000,000 patients already treated with Motrin is an objective measure of physicians' confidence in the ability of Motrin to relieve the pain and inflammation associated with rheumatoid arthritis and osteoarthritis.

So it is not surprising that in this short period Motrin has become the most frequently prescribed alternative to aspirin. Motrin relieves joint pain and inflammation as effectively as indomethacin or aspirin, but causes significantly fewer CNS and milder GI reactions. However, gastrointestinal bleeding, sometimes severe, has been associated with Motrin, aspirin, indomethacin, and other nonsteroidal antiarthritic agents.

*The safety and effectiveness of Motrin have not been established in patients with Functional Class IV rheumatoid arthritis (incapacitated, largely or wholly bedridden, or confined to wheelchair; little or no self-care).



Motrin[®] 400 mg TABLETS ibuprofen, Upjohn

The confidence that comes from experience—
one more reason to prescribe Motrin.

Please turn page for a brief summary of prescribing information.

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

The confidence that comes from experience—
one more reason to prescribe

Motrin[®] 400 mg TABLETS

ibuprofen, Upjohn

Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. Aspirin used concomitantly may decrease Motrin blood levels. Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin (ibuprofen) is gastrointestinal (4% to 16%). This includes nausea[®], epigastric pain[®], heartburn[®], diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness[®], headache, nervousness. **Dermatologic:** Rash[®] (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Incidence: Unmarked 1% to 3%; *3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Suggested dosage is 300 or 400 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day.

How Supplied

Motrin Tablets, 300 mg (white)

Bottles of 60

NDC 0009-0733-01

Bottles of 500

NDC 0009-0733-02

Motrin Tablets, 400 mg (orange)

Bottles of 60

NDC 0009-0750-01

Bottles of 500

NDC 0009-0750-02

Unit-dose package of 100

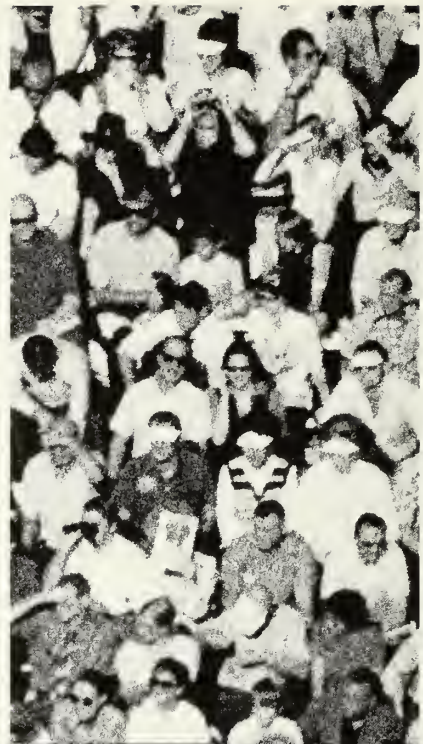
NDC 0009-0750-06

Unit of Use bottles of 120

NDC 0009-0750-26

Caution: Federal law prohibits dispensing without prescription.

NIM-3



MSD
MERCK
SHARP
DOHME

ALDOMET[®]
(METHYLDOPA/MSD)

TABLETS: 500 mg, 250 mg, and 125 mg

Upjohn

The Upjohn Company
Kalamazoo, Michigan 49001

Councilor Reports

(Continued from page 218)

DISTRICT 9

District 9 has been stable during 1978. There have been several new physicians locating in Salina, Minneapolis and Abilene, with expectations for additional physicians in the surrounding communities in 1979.

President Warren Meyer spoke at a meeting in Salina in November 1978. He discussed pertinent events concerning the medical field on the state and national level. We were fortunate to have Mr. Ed Annis in Salina for a visit.

We are hopeful of a Family Practice Residency Training Program to be established in Salina in the near future.

H. D. DOUBEK, M.D., *Councilor*

DISTRICT 10

The physicians and spouses of Council District 10 met at the Prairie Dunes Country Club, Hutchinson, on February 27, 1979. Warren E. Meyer, M.D., and Gary Caruthers spoke to the group on matters relating to the Kansas Medical Society. Mrs. Dot Meyer gave a brief report on activities of the Kansas Medical Society Auxiliary.

The physicians of McPherson, Marion, and Harvey counties have each hosted the tri-county medical society meetings in their area during the past year.

District 10 physicians are looking forward to hosting the Kansas Medical Society Annual Meeting in the new Holidome in Hutchinson in May 1979.

HERBERT FRANSEN, M.D., *Councilor*

DISTRICT 11

Richard Cummings, M.D., as the 1978 President of the Medical Society of Sedgwick County, had an outstanding year in accomplishing many of the goals which he had set for the society. Improvement in public relations through public education was accomplished by a taped radio broadcast over a local radio station, twice weekly, with Dr. Cummings and a local radio announcer and special guests responding to specific questions about disease and medical problems as raised by the listeners. This format will be expanded in 1979, and will involve television rather than radio, with Dr. John Schlueter, incoming MSSC President, as host.

A special Ad Hoc Committee on Cost Containment was appointed by Dr. Cummings. After a six-month study, an extensive report, with recommendations, was made. These recommendations have been widely publicized in the area and have been made available to the Kansas Medical Society's Committee on Cost Containment, as well as to the State Legislature and the Kansas Legislative Commission on Cost Containment.

In February 1978, 58 new physicians and their spouses who had joined MSSC during the previous year were guests of the medical society at a local theatre dinner party.

There was a great emphasis on socio-economics of medicine during the year. A public speaking seminar for the members of the county society was held in conjunction with Smith Kline & French in Wichita in April 1978.

The Legislative Committee was very active during the 1979 session and again, as in the past, entertained the local legislators with a dinner party in Wichita during the session. This was well received.

There continues to be good cooperation and expansion of the joint efforts by physicians and pharmacists of the Wichita area in using the hot line in an attempt to curb drug abuse through fraud, forged prescriptions, or improper use of prescriptions. This program was established in 1977, and is quite successful.

The Foundation for Medical Care of Sedgwick County Medical Society was authorized by MSSC Board to proceed with contacting the various industrial groups in the community and offering to establish some type of prepaid health care plan on a community-wide basis, which would be an alternative to closed panel HMO if such would become operational in the community, giving the industrial employee groups and individuals a second option to the customary fee-for-service insurance system. Along this line, Mr. Boyd Thompson, Executive Director of the American Association of Foundations, and the American Association of PSROs from Stockton, California, spoke at the April 1978 general membership meeting of the society, encouraging us to join hands with local industry in establishment of such a prepaid plan. The other alternative would be the establishment of a peer review mechanism for the private insurance sector. This also is being explored by the society in conjunction with the Kansas Foundation for Medical Care.

Local MSSC committees were established for the purpose of assisting the southeastern region of Kansas and local HSA organizations in development of guidelines concerning hospital bed requirements,

obstetrical guidelines, CT scanning equipment and other diagnostic equipment guidelines, radiation therapy guidelines, rehabilitation and renal disease guidelines, and behavioral science guidelines. These committees have been very active and have had significant input into the guidelines which have been approved or which are being currently formulated by Southeast Kansas HSA.

During the past year, the local *MSSC News* has on a monthly basis carried a rather comprehensive story about a personality of the month, recognizing the accomplishments and presenting background information about physicians in our community who have made significant contributions to the civic and medical community.

At the Sports Day banquet in September 1978, in addition to the usual sports awards, special awards were made to the following:

George Cowles, M.D. — Outstanding Community Service Award

D. Cramer Reed, M.D. — Medical Education Achievement Award

Paul Wedin, M.D. — Humanitarian Service Award

This was well received by our membership and represents recognition of various types of outstanding achievement while the individual physician is still in the community as a member of the medical society.

The MSSC continues to be quite active in providing guidance, cooperation and understanding between the medical community, lay public, the University of Kansas School of Medicine — Wichita, and the University of Kansas School of Medicine — Kansas City. The society continues to work in a cooperative way with the local hospitals, the deans of the medical schools, and the University of Kansas Chancellor in planning future growth and development in an orderly fashion in the Wichita community. The society was requested by UKSM to coordinate and evaluate the EMT-EMICT Training Programs in the area, and to continue to provide continuing education for these technicians.

Dr. Lew Purinton was elected president-elect of the Medical Society of Sedgwick County for 1979, and will assume office on January 1, 1980. Dr. John Schlueter is serving as President of the society for 1979.

Despite many accomplishments of the society, I close this report with a note of sadness noting that a rather significant and unusual number of outstanding physicians have been lost from the rolls of MSSC through their passing from this life. Their presence

as physicians, community, and medical leaders will be sorely missed by all of us.

IVAN E. RHODES, M.D., *Councilor*

DISTRICT 12

Council District 12 has advanced its ability to render quality and quantity medical care this year. Regular, well attended educational component society meetings were held throughout the year.

Most hospitals now have nuclear medicine capabilities, fiberoptic endoscopy, multi-test computerized laboratory machines, and sonography. Teaching of medical students, physician assistants, nursing, and EMT personnel is an ongoing effort in all areas. Radiology has been improved and radiologists are working in most hospitals. A new physician has located in our area this year. Additions to the hospital at Pratt were completed this year.

P. J. ANTRIM, M.D., *Councilor*

DISTRICT 13

In the past year, the Central Kansas Medical Society membership was augmented by Dallas Richards, M.D., an internist who joined Jim Allen, M.D.; Dennis Hatch, M.D., family practitioner, who is practicing in Phillipsburg; and V. W. Steinkruger, M.D., who joined the Smith Center Medical Group to practice family medicine. Sue Huffstetter, M.D., psychiatrist, was also welcomed to Hays where she has joined John Cody, M.D., at the High Plains Mental Health Clinic. We have also been fortunate in that Dorothy Cody, M.D., who had been inactive during the period of time during which she raised her small children, has rejoined the medical community in an active practice. Her assumption of the duties of Student Health Physician at Fort Hays State University and of County Health Officer have been much appreciated by all. Partially offsetting these welcome gains in practicing physicians in our geographic area are the losses of Ralph Bula, M.D., through retirement, and Henry O'Donnell, M.D., who died in September 1978.

The physicians in CKMS have continued to espouse an active interest in the UKSM preceptor-preceptee program. Approximately twenty students rotated in family practice, surgery, obstetrics, radiology, pediatrics, general medicine, and pathology for one-month intervals during the course of 1978. This is a mutually satisfying experience for both practitioners and students. The preceptor-preceptee discussions, led by Ralph Reed, M.D.,

director of the program, have been well attended and rewarding for all. We look forward to continuing our participation in these activities.

The activities of the High Plains Educational Consortium have been continuous and have enjoyed favorable acceptance by the medical staffs. We look forward to ever increased and continuously improved programs. The program committee has adopted the schedule of 1979 educational offerings, which will be printed in the list of sponsored educational activities to be published and distributed by the KMS executive office.

Jacquin's postulate on democratic government states, "No man's life, liberty or property are safe while the legislature is in session." For this reason, we have been particularly appreciative of the pink legislative bulletins and have tried to not only follow the reports but as much as possible to disseminate them. The latter remains a problem. As a mild diabetic patient, I personally would like to see SB-92 die a quiet death. The precedent set by requiring the reporting of non-communicable disease to the State Department of Health seems to me both unnecessary, burdensome and most importantly, meddling, if not outright dangerous. After diabetes, what? With others, we oppose the increasing activity of the chiropractors and hope for the defeat of HB-2369 authorizing chiropractors to draw blood for diagnostic purposes. Even by their own tenets, this would appear to us to be superfluous and irrelevant, and we worry that this represents the first step toward the use of all hospital facilities and eventually the hospital itself. In an age when improved quality is the byword, this appears positively anachronistic.

The interests of physicians in this region are similar to the interests of physicians throughout the state and the nation. We concern ourselves with those problems which appear to threaten the integrity of the world's best medical system. We join in the efforts to buttress that system from those who attack it for their own motives, often deceptively disguised. However, no new challenges not previously offered in some other guise appear to have arisen in the last 12 months, and we wonder if we may be fortunate enough to ride through a period of national insanity, eventually returning to a more stable and reasonable world and an environment in which the professional opinions of the physician, even those relating to the conditions under which we can most effectively practice, may again have some value.

Warren Meyer, M.D., President of the Kansas Medical Society, and Gary Caruthers, Assistant Executive Secretary, met with the membership of CKMS on November 16, 1978, and discussed issues

of concern to the Kansas Medical Society. This was preceded by a scientific meeting with a CPC, followed by the election of the new officers of CKMS and the new District Councilor. Chosen for 1979 was Harl Stump, M.D., Hays, President; Ward Newcomb, M.D., Hays, Vice President; and Jon Richards, M.D., Phillipsburg, Secretary-Treasurer. Wallace Weber, M.D., Hays, will serve as the new Councilor for District 13. I have enjoyed my past six years' association with this job, the other Councilors, and the administration and leadership of the Kansas Medical Society, and wish Doctor Weber well as he now assumes these duties.

L. WM. HALLING, M.D., *Councilor*

DISTRICT 15

It has been a relatively quiet year in Council District 15. We did not meet with President Meyer and his wife until the first week in January. The meeting was well attended and our discussion was primarily concerned with the socio-economic political facets of the practice of medicine.

I am happy to report that our supply of physicians has increased in the last year. R. C. Trotter, M.D., joined Charles Stephens, M.D., in Minneola, in family practice. George McNickel, M.D., returned to his home town of Ashland to enter family practice, and the major cities in the 15th district — Dodge City and Liberal — both had an increase in the number of physicians practicing in the community. For the first time in a good many years there seems to be an increase in primary care physicians in the area, but we still have shortages in some of the specialties.

Continuing Medical Education has become a big factor in all of our lives in the last year, and Dodge City is having bimonthly continuing medical education programs now. These have been approved for credit, and the program is being chaired and capably run by Howell Johnson, M.D., of Dodge City.

I think that we are all anxiously watching the resolution of the National Health Insurance question, and hope that the government does not emotionally destroy the best medical system in the world.

EVAN R. WILLIAMS, M.D., *Councilor*

DISTRICT 16

The Northwest Kansas Medical Society continued in the past year to show a slow but steady growth in the number of physicians practicing in northwest Kansas.

New to the area are James Fitzgerald, M.D., and Rodney S. Dill, M.D., who have established a joint practice in Atwood; Robert S. Simpson, M.D., who has joined Ren Whitaker, M.D., at the Oberlin Clinic in Oberlin; and Dwight S. Jacobsen, M.D., who joined the Colby Clinic in Colby.

The continuing search for new physicians and continuing education occupies a good part of the physicians' time. Doctors from Quinter, St. Francis, Colby, Goodland, Hoxie, Oakley, and Atwood continue to participate in the UKSM preceptorship program, and the Colby Clinic has residents from the St. Joseph's Family Practice Residency Program rotating through the Clinic for part of their training. Continuing education needs are being met by attendance at UKSM circuit courses, special courses by UKSM Outreach, and by the various specialty societies and universities.

Victor H. Hildyard, II, M.D., Colby, has been appointed medical director of Region I Emergency Medical Service Council.

LaDonna M. Regier, M.D., Colby, has been appointed to the State Blue Cross Board of Directors.

At the October meeting of the Northwest Kansas Medical Society, our special guests were President Warren Meyer and Mrs. Meyer.

Elected for 1979 were: Asher W. Dahl, M.D., President; Victor Hildyard, II, M.D., Vice President; and George D. Marshall, M.D., Secretary-Treasurer.

FLOYD L. SMITH, M.D., *Councilor*

DISTRICT 17

The Southwest Kansas Medical Society held four meetings in 1978. One scientific presentation was made and three informational type meetings were held with guest speakers on timely medical and economic topics. Officers for 1979 are: Myron Zeller, M.D., President; Frank Eichorn, M.D., Vice President; and John Gilbert, M.D., Secretary-Treasurer. Our state President, Warren E. Meyer, M.D., and his lovely wife, Dorothy, were our guests at the winter meeting in December. Dr. Meyer presented a personalized summary of state and national activities during the past six months, and a candid view of future medical realities and fantasies for 1979.

We continue to enjoy the relationship with medical students, interns, and residents from the universities of Kansas and Colorado. The interest, motivation, and excitement which they generate does much for our morale and ultimate care of our patients. While we have not increased the number of family physicians, this year, the Garden Medical Clinic,

PA, has added two new specialists — John Calbeck, M.D., Internal Medicine, and Ted Gardiner, M.D., Pediatrics.

Our biggest challenge in 1979 will be to provide more family physicians for our growing population, and more water for our growing crops.

MAX E. TEARE, M.D., *Councilor*

DISTRICT 18

The main changes in the district seemed to have occurred in the area of medical and administrative personnel. Both Ottawa and Lawrence hospitals have obtained new administrators in the past year. The Ottawa area noted a low census during the year in their hospital with the average down about six patients/day. Research Hospital is planning to put a gamma camera in the Ottawa Hospital. It will be based there and then be used as a portable scanner to cover the surrounding area. One physician left Ottawa which put a strain on the medical community, but two new graduates from the Family Practice residency will be setting up practice soon. One comes from a residency in Iowa and one from a residency in Wichita.

The Lawrence Hospital is now in full operation with all departments functional. Their main problem during the past year apparently resulted from an efficiency study which created staffing shortage problems particularly in the laboratory and on some floors. The dietary department had been having problems with meal quality and preparation, but this should soon improve. We were saddened by the deaths during the past year of Drs. Margaret Clark and Corbin Robison. With Dean Bray, M.D., moving to Colorado, vacancies for three physicians were open; fortunately, five new physicians have set up practice here.

The KMS Auxiliary had a large rummage and bake sale, with good results. They used the money to supply some medical equipment to the Lawrence Memorial Hospital and to make a large donation to Alex Mitchell, M.D., for his Project Concern, in Bolivia.

Larry Ingham, M.D., received a plaque in appreciation of the tremendous number of hours that he has put in assisting in review of the ambulance service and its new CPR function. The Medicare program continues to issue new rules, raising the costs and lowering the benefits to the patient, and blaming the medical profession and hospitals for everything. It appears this pattern is going to persist for a long time to come.

ROBERT W. HUGHES, M.D., *Councilor*

The Great Laxative Escape



COLACE[®]

dioctyl sodium sulfosuccinate

Colace means escape—from laxative stimulation, from laxative harshness, from laxative habit. Colace gently helps soften stools for easy, painless, unstrained elimination. It's the great laxative escape, from infancy to old age. Available in 100 and 50 mg. capsules. Syrup or liquid.

Mead Johnson

PHARMACEUTICAL DIVISION

©1978 Mead Johnson & Company • Evansville, Indiana 47711 U.S.A. J578-1

This asthmatic isn't worried about his next breath...

**he's active
he's effectively
maintained on**

QUIBRON[®]

Each capsule or tablespoonful (15 ml) liquid contains theophylline (anhydrous) 150 mg and glyceryl guaiacolate (guaifenesin) 90 mg

- theophylline for effective around-the-clock bronchodilator therapy
- 100% free theophylline

Indications: For the symptomatic relief of bronchospastic conditions such as bronchial asthma, chronic bronchitis, and pulmonary emphysema.

Warnings: Do not administer more frequently than every 6 hours, or within 12 hours after rectal dose of any preparation containing theophylline or aminophylline. Do not give other compounds containing xanthine derivatives concurrently.

Precautions: Use with caution in patients with cardiac disease, hepatic or renal impairment. Concurrent administration with certain antibiotics, i.e., clindamycin, erythromycin, troleandomycin, may result in higher serum levels of theophylline. Plasma prothrombin and factor V may increase, but any clinical effect is likely to be small. Metabolites of guaifenesin may contribute to increased urinary 5-hydroxyindoleacetic acid readings, when determined with nitrosonaphthol reagent. Safe use in pregnancy has not been established. Use in case of pregnancy only when clearly needed.

Adverse Reactions: Theophylline may exert some stimulating effect on the central nervous system. Its administration may cause local irritation of the gastric mucosa, with possible gastric discomfort, nausea, and vomiting. The frequency of adverse reactions is related to the serum theophylline level and is not usually a problem at serum theophylline levels below 20 mcg/ml.

How Supplied: Capsules in bottles of 100 and 1000 and unit-dose packs of 100; Liquid in bottles of 1 pint and 1 gallon.

See package insert for complete prescribing information.

Mead Johnson

PHARMACEUTICAL DIVISION

© 1979 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. MJL 6-4220R4

DISTRICT 19

This has been a rather quiet year for Council District 19. Our membership has grown approximately 10 per cent, with an influx of new physicians to the area, including a number of foreign trained physicians, which illustrates the fact that Southeast Kansas has been and remains one of the most underserved medical areas of the state.

Our Southeast Kansas Medical Society, comprising seven counties, holds its monthly meetings at the Independence Country Club on the third Wednesday evening of each month. Attendance has been good — primarily due to the number of excellent programs provided by our officers. (Good steak dinners help a lot, too!)

Dr. Warren Meyer and his wife favored us with the annual visit of the state president on March 22, at which time Dr. Meyer ably discussed the KMS legislative proposals.

ROBERT F. MOORE, M.D., *Councilor*

Buy U.S. Savings Bonds

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612

HEALTH INFORMATION ACCESS

Extended biomedical library services are available to all Kansas Health Personnel who have limited or no library facilities.

For:

- . . . Prompt medical reference services
- . . . Preparation of bibliographies/computerized literature searches
- . . . Photocopying and mailing of book and journal articles

Dial toll-free: 1-800-332-4193 UKSM Kansas City, KS

There are trained Medical Librarians on duty Monday through Friday from 8 AM to 5 PM to answer your information needs.

NOMINATING COMMITTEE

The Nominating Committee of the Kansas Medical Society submits to the House of Delegates the following list of nominations for the elective offices of the Society. Wherever more than one nomination appears, these are presented in alphabetical order. A very brief biography accompanies each name.

President-elect

Phillip A. Godwin, M.D., Lawrence. Born in 1928. Graduated from the University of Kansas School of Medicine in 1955. In practice of Anesthesiology. Is currently serving as First Vice-President.

First Vice-President

Herman W. Hiesterman, M.D., Quinter. Born in 1923. Graduated from the University of Kansas School of Medicine in 1951. Is engaged in Family Practice. Has served as Councilor. Is currently serving as Second Vice-President.

Second Vice-President

Rex R. Fischer, M.D., Manhattan. Born in 1934. Graduated from the University of Nebraska School of Medicine in 1960. In practice of Obstetrics/Gynecology. Is currently serving as chairman of the Maternal Health Committee and on KaMPAC Board.

L. William Halling, M.D., Hays. Born in 1927. Graduated from the University of Vermont School of Medicine in 1957. Is currently serving as Councilor. Has served as Acting President of the Kansas Foundation for Medical Care. In practice of Pathology.

Lew W. Purinton, M.D., Wichita. Born in 1923. Graduated from the University of Kansas School of Medicine in 1948. Is engaged in the practice of Internal Medicine. Is serving as AMA Alternate Delegate; is chairman of the Committee on Education. Is President-Elect of the Medical Society of Sedgwick County.

Millard C. Spencer, M.D., Topeka. Born in 1928. Graduated from the University of Kansas School of Medicine in 1955. In practice of Radiology. Is currently serving as Councilor.

Kermit G. Wedel, M.D., Minneapolis. Born in 1932. Graduated from the University of Kansas School of Medicine in 1960. Is in Family Practice. Is currently serving as Councilor and AMA Alternate Delegate.

Constitutional Secretary

Jack R. Cooper, M.D., Shawnee Mission. Born in 1917. Graduated from the Ohio State University School of Medicine in 1943. Practices Neurosurgery. Is currently serving as Secretary.

Treasurer

William K. Walker, M.D., Sedan. Born in 1928. Graduated from the University of Kansas School of Medicine in 1945. Is in Family Practice. Is currently serving as Treasurer.

Speaker

Clair C. Conard, M.D., Dodge City. Born in 1927. Graduated from the University of Kansas School of Medicine in 1955. Practices Internal Medicine. Is now serving as Speaker of the House of Delegates and AMA Delegate.

Vice-Speaker

John O. Yulich, M.D., Kansas City. Born in 1933. Graduated from the University of Kansas School of Medicine in 1959. Is in Family Practice. Is now serving as Vice-Speaker.

AMA Delegate

Clair C. Conard, M.D., Dodge City. Born in 1927. Graduated from the University of Kansas School of Medicine in 1955. Practices Internal Medicine. Is now serving as Speaker of the House of Delegates and AMA Delegate.

AMA Alternate Delegate

Lew W. Purinton, M.D., Wichita. Born in 1923. Graduated from the University of Kansas School of Medicine in 1948. Is engaged in the practice of Internal Medicine. Is serving as AMA Alternate Delegate; is chairman of the Committee on Education. Is President-Elect of the Medical Society of Sedgwick County.

Resolutions

(Continued from page 220)

- 9 WHEREAS, Consultations have been an integral part of the practice of medicine since its inception and not a brainchild of government nor the insurance industry; and
- 10
- 11
- 12
- 13 WHEREAS, Physicians are urged to seek consultation whenever it is in the best interests of good patient care; therefore be it
- 14
- 15 *Resolved*, That the Kansas Medical Society
- 16
- 17 is in opposition to coercive Second Opinion programs that:
- 18
- 19 a. Establish closed panels of consultants
- 20
- 21 b. Limit choice of physician by patient or doctor
- 22
- 23 c. Predetermine qualifications of consultants
- 24
- 25 d. Predetermine categories of elective versus non-elective surgeries
- 26
- 27 e. Establish reimbursement for such consultations
- 28
- 29 f. Establish restrictions on the consultants; and that such coercive programs are detrimental to the doctor/patient relationship.
- 30

RESOLUTION NO. 79-

(Submitted by Clair Conard, M.D.)

Physician Extender Supervision

- 1 WHEREAS, The programs of physician assistants, nurse clinicians and other physician extender programs were developed to enable a physician to see more patients; and
- 2
- 3
- 4
- 5 WHEREAS, Nurse clinicians, physician assistants and other physician extenders were
- 6

(Continued on page 229)

Ka M P A C
KANSAS MEDICAL POLITICAL ACTION COMMITTEE
1300 TOPEKA AVE. • TOPEKA, KANSAS 66612

April 1979

Dear Doctor:

As you are aware, dues statements for KaMPAC have recently gone out to KMS members and your participation is needed.

The election off year is an important time for KaMPAC. It provides us with the opportunity to assess the performance in the recent election in terms of the percentage of winning candidates we supported, the percentage of money that went to winning candidates, and the timeliness of the dispersion of donations. A number of successful candidates have sent letters of appreciation for our endorsement and support in the 1978 elections. This is most encouraging and rewarding. Also, we value very much the feedback from our members, as these are the people KaMPAC serves, and their ideas, suggestions, criticisms, and recommendations are of crucial importance to the performance evaluation.

Another very important opportunity the off year provides is that of developing a strong financial position to ensure that KaMPAC will be effective in the 1980 elections. Here again, members are extremely important and your participation is needed and encouraged.

The political arena is becoming more sophisticated and formidable than at any time in the past, and to perform well in this arena KaMPAC must be successful in all of the above areas. This can be done with your help.

Sincerely,
Ronald Davis, M.D.
Chairman

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

Tenuate®
(diethylpropion hydrochloride NF)

Tenuate Dospan®
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecomastia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES INC.

Cayey, Puerto Rico 00633

Direct Medical Inquiries to

MERRELL-NATIONAL LABORATORIES

Division of Richardson-Merrell Inc.

Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell®

References: 1. Citations available on request — Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

**Whether overweight is a
complicating factor...
or just uncomplicated overweight.**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

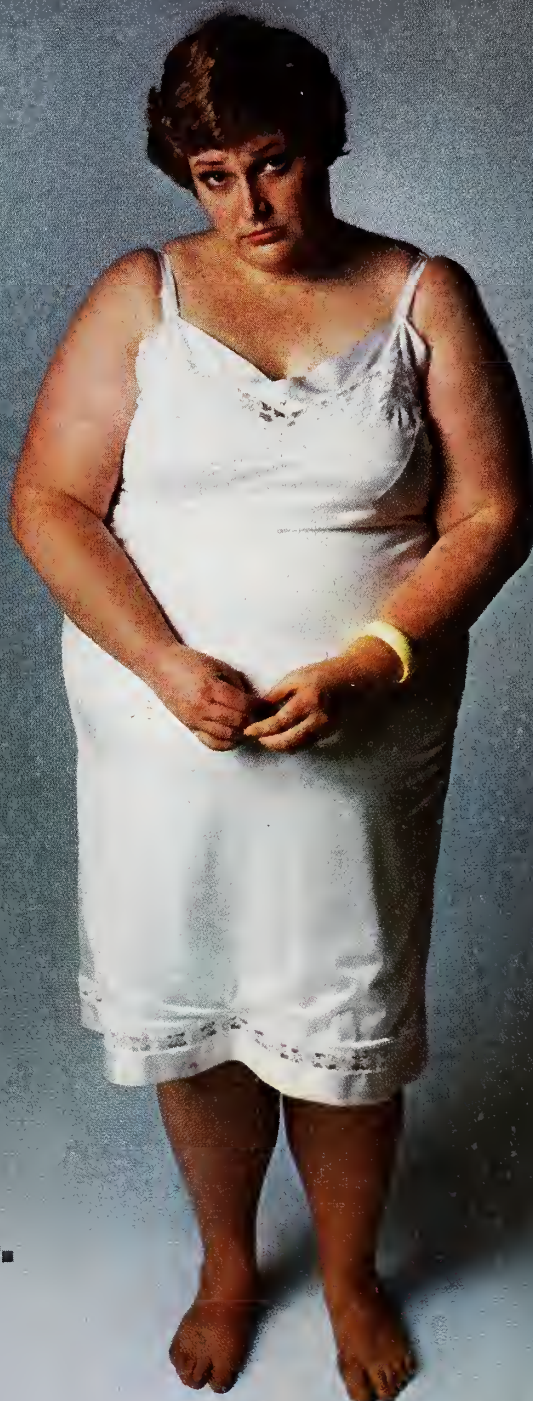
Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

Merrell

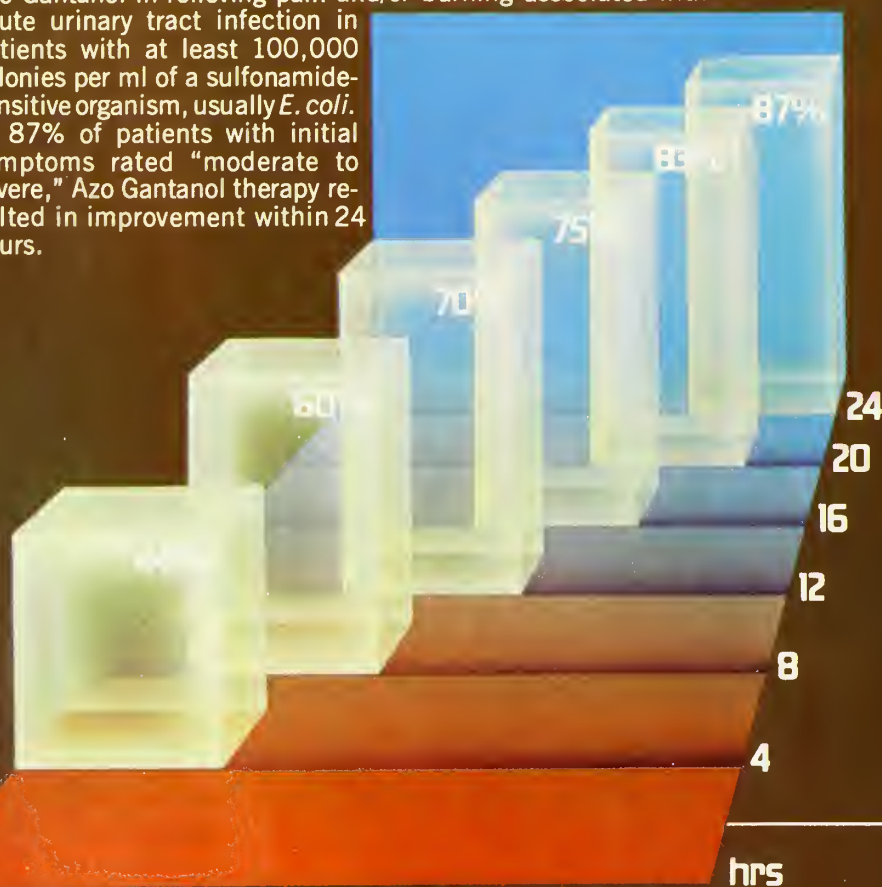


For prescribing information see opposite page

Important data on the pain of acute cystitis:

In 87% of patients studied (303 of 349), Azo Gantanol® reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli*. In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Fast pain relief plus effective antibacterial action

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for
the pain

for
the pathogens

*Data on file. Hoffmann-La Roche Inc., Nutley, New Jersey 07110.

Before prescribing, please consult complete product information, a summary of which follows:
Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note:** Fully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; aminobenzoic acid to follow-up culture media, increasing frequency of resistant organisms limit the usefulness of antibacterials including sulfonamides. Measure sulfonamide blood levels; variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term or during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pain, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists causes other than infection should be sought. After relief of pain has been obtained, continue treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche
Nutley, New Jersey 07110

Resolutions*(Continued from page 226)*

7 never intended to serve as replacements for
8 physicians; and

9 WHEREAS, The education and training of
10 these physician extenders are not adequate to
11 practice medicine independently; therefore be it

12 *Resolved*, That nurse clinicians, physician
13 assistants and other physician extenders must
14 work under the direct supervision of a physician
15 licensed to practice medicine and surgery; and
16 be it further

17 *Resolved*, That direct supervision means that
18 each and every patient must be checked by the
19 sponsoring physician; and be it further

20 *Resolved*, That a copy of this resolution be
21 submitted to the appropriate state agencies and
22 introduced at the AMA Interim House of Dele-
23 gates meeting in Chicago.

RESOLUTION NO. 79-*(Submitted by Johnson County Medical Society)***Federal Regionalism**

1 WHEREAS, There is now House Concurrent
2 Resolution 5010, before the Kansas Legisla-

3 ture, providing for a special commission to
4 make a legislative study of the constitutionality
5 and other aspects of regional government, to
6 wit:.

House Concurrent Resolution No. 5010

7 WHEREAS, In Kansas and across the na-
8 tion, this new form of governance is being
9 created under different names such as Mid-
10 America Regional Council, river basin com-
11 pacts, metropolitan regions, city-county
12 consolidation charters, and federal region-
13 sub-state regions, all of which constitute
14 "metro" or "regional" government; and

15 WHEREAS, Many respected authorities on
16 government and constitutional law declare
17 that the purpose of regional governance is to
18 eliminate cities, counties and states, and their
19 elected officials, and will usurp the rights and
20 freedoms of individual citizens guaranteed
21 by the constitution of this state and of the
22 United States of America; and

23 WHEREAS, Members of the legislature of
24 this state have taken an oath to uphold the
25 constitutions of the United States and of this
26 state, and must hold as sacred trust their

(Continued on page 232)

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

Generics save money. Big money!

The FTC estimates that \$400 million could be saved annually on the nation's Rx bill if physicians prescribed generics. Are you saving *your* patients extra dollars?

Purepac, America's leading manufacturer of a national brand of generics, would like to show you the tremendous savings possible with just three of our 700 generic products:

DRUG		AVERAGE RX PRICE (100's)	\$ SAVINGS WITH PUREPAC	% SAVINGS WITH PUREPAC
Pavabid Capsules*	150 mg.	\$10.32		
Purepac Papaverine	150 mg.	3.95	\$6.37	61.7%
Equanil Tablets*	400 mg.	8.15		
Purepac Meprobamate	400 mg.	1.85	6.30	77.3%
Librium Capsules*	10 mg.	8.76		
Purepac Chlordiazepoxide HCl.	10 mg.	3.90	4.86	55.4%

*Registered trademarks of Marion Labs., Wyeth Labs., Roche Labs., respectively

Purepac generics save money. Big money. Purepac is dedicated to providing your patients with quality products that are equivalent to their brand name counterparts at significant savings.

But we can't do it alone. We need your cooperation.

Send for Purepac's *free* Brand Name/Generic Name Reference Chart today. You'll receive an alphabetical listing of brand name drugs with their generic counterparts.

And next time you write a prescription, write for Purepac brand generics. Your patients will know you care.

PUREPAC. Competitive prices and peace of mind.

FREE!

Please send me my FREE copy of Purepac's Brand Name/Generic Name Chart.

Name _____

Address _____

City _____ State _____ Zip _____

Mail to Purepac Pharmaceutical Co.,
200 Elmora Avenue, Elizabeth, N.J. 07207

KM479



PUREPAC

Elizabeth, NJ 07207

THE LEADING NATIONAL BRAND OF GENERICS

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

**IN KANSAS
YOUR INDEPENDENT AUTHORIZED DEALERS ARE:**

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Euporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street • Chicago, Illinois 60646

An American Company

INDEX TO ADVERTISERS

Beltone Electronics Corporation	231
Blue Cross/Blue Shield of Kansas	196
Burroughs Wellcome Co.	191
Capitol Federal Savings & Loan Ass'n	229
Central Bank & Trust	219
Goetze-Niemer Company	192
P. W. Hanicke Manufacturing Company	194
Health Central	194
Huaman Pathology Laboratory	192
Kansas Foundation for Medical Care	202
Latimore-Fink Laboratories	198
Eli Lilly Company	186
Mead Johnson Pharmaceutical Division	224a, 224b
Medical Protective Company	198
Merck Sharp & Dohme	220d
Merrell-National Laboratories	192b, 193, 194, 228, 228a
Mid-America Computing, Inc.	197
Midwest Pension Planners	185
Munns Medical Supply	197
The Mutual Association for Professional Services	190
Purepac Pharmaceutical Co.	230
Roche Laboratories	188, 188a, 188b, 220a, 228b, C3, C4
Smith Kline & French	192a
The Upjohn Company	220b, 220c, 220d

CLASSIFIED ADVERTISEMENTS

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the JOURNAL.

FOR SALE: Soundscribe equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

Mid-America Cancer Center Program seeking Associate Director for Cancer Outreach. Experience in clinical aspects of cancer, education, and community relations. Contact James T. Lowan, M.D., Director, Mid-America Cancer Center, KUMC, 39th & Rainbow, Kansas City, KS 66103.

DOCTOR/PILOT AIRPLANE. Excellent 1964 Baron Co. plane. One owner; one pilot. King radio pkg; KNX 610 RNAV, Bonzer radar alt, auto pilot, Norco ATGA w/encoder. Extra run out engine & spare prop. Nov. 1979 annual. Call Orval Dale 913-827-1007 or Craig Roberts 827-0433. Priced @ \$39,000 by owner.

WANTED — FAMILY PRACTITIONER. No. Central Kansas, 9500 service area; 50-bed county hospital. Rural Health Initiative Federal Grant renovating and equipping clinic. Hunting & fishing; good schools; university 1-hr drive. Contact Melinda Bailey, Director, Washington County Horizons Health Services, P.O. Box 177, Washington, KS 66968, 913-325-2266. An Equal Opportunity Employer.

Resolutions

(Continued from page 229)

28 responsibility to protect the freedom and
29 liberties of the citizens of this state: Now,
30 therefore,

31 *Be It Resolved by the House of Represent-*
32 *atives of the State of Kansas, the Senate Con-*
33 *curring Therein:* That the legislative coor-
34 dinating council shall appoint a special
35 committee to study regional government in
36 all its aspects and under whatever name or
37 form, including, but not limited to its origins,
38 development, functions, purposes and goals
39 and such other matters as the legislative
40 coordinating council may specify. Such spe-
41 cial committee shall make its report and rec-
42 ommendations to the legislature and transmit
43 the same to the legislative coordinating
44 council on or before December 1, 1979, un-
45 less such council authorizes an extension of
46 such time.

47 WHEREAS, The direct application of the prin-
48 ciples of Federal Regionalism through
49 "MAHSA" to the general and private practice
50 of medicine is of doubtful value and is oppres-
51 sive; and

52 WHEREAS, The adoption of this proposed
53 Resolution is to the benefit of Kansas phy-
54 sicians, as well as all Kansans; and

55 WHEREAS, The Johnson County Medical So-
56 ciety has submitted a Resolution on Federal
57 Regionalism to the House of Delegates of the
58 Kansas Medical Society at their regular ses-
59 sions in 1977 and 1978, and has adopted a

60 Resolution endorsing and supporting this cur-
61 rent proposed legislation; does submit this Res-
62 olution to the House of Delegates of the Kansas
63 Medical Society; therefore be it
64 *Resolved*, That the Kansas Medical Society
65 does endorse and support this current proposed
66 legislation, and that a copy of this Resolution be
67 sent to the Legislative Coordinating Council of
68 the Kansas Legislature.

RESOLUTION NO. 79-

(Submitted by Warren E. Meyer, M.D.)

Medical Scholarship Program

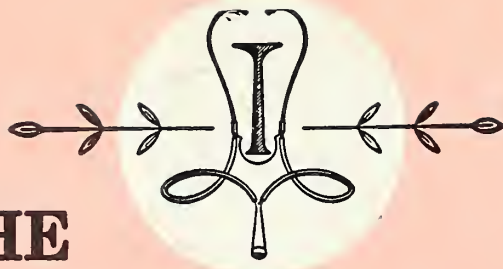
1 WHEREAS, The acceptance of the scholarship
2 program by medical students of the University
3 of Kansas School of Medicine has far exceeded
4 the expectations of the legislature; and

5 WHEREAS, Students feel that they are being
6 forced to remain in Kansas and accept the state
7 tuition programs because of their inability to
8 afford the higher tuition costs without the state
9 program; and

10 WHEREAS, The large commitment of state
11 funds to finance the program raises serious fis-
12 cal questions about the need and appropriate-
13 ness of continuing the program indefinitely;
14 therefore be it

15 *Resolved*, That the Kansas Medical Society
16 petitions the legislature to provide a "sunset"
17 clause in the scholarship program; and be it
18 further

19 *Resolved*, That the copies of this resolution
20 be sent to all state legislators and the Governor
21 of the State of Kansas.



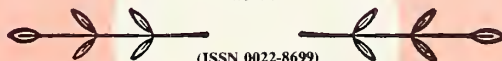
A.C.S. Issue

THE
Journal
OF THE
Kansas
Medical
Society

LIBRARY
U.C. SAN FRANCISCO

JUN 11 1979

MAY
1979



(ISSN 0022-8699)
VOL. LXXX
NO. V

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for May

Scientific Articles

- Pancreatic/Duodenal Trauma: The Use of Serosal Patch — A. K. Tayiem, M.D., Atchison 247
- Spastic Ileus: A Review — J. E. Bosiljevac, M.D., Wichita 251
- Valvular Heart Surgery: Current State of Surgical Treatment — Donald A. Barnhorst, M.D., Kansas City, Kansas 256
- Light Microscopy: Histologic Analysis of Normal and Diseased Osteons — Anthony E. Francis, M.D.; J. J. Lin, M.D., and H. O. Marsh, M.D., Wichita 260
- Ulcerative Colitis: Operative Experiences in the Elderly — Rick Windle, M.D., and David E. Street, M.D., Wichita 264
- Soft Tissue Injuries: Use of Arthrograms to Determine Ligament Injury to the Ankle — Harry G. Kroll, M.D., and David E. Thurston, M.D., Topeka 267
- Morbid Obesity: Gastric Bypass — Charles E. VanHouden, M.D., and Jan deBakker, M.D., Wichita 269
- Total Parenteral Nutrition: Guidelines for Utilization of Intralipid and Peripheral Veins — J. E. Bosiljevac, M.D., Wichita 272
- Pulmonary Sequestration: Diagnosis and Management — Phillip A. Visser, M.D., and David R. Stewart, M.D., Kansas City, Kansas 279
- Partial Splenectomy: Case Report of a Six-Year-Old Male — Rick Windle, M.D.; Yong U. Lee, M.D., and Medo Mirza, M.D., Wichita 285

Current Comment

- Acne Vulgaris — Thelda Kestenbaum, M.D. 288

Socio-Economics

- Termination of the Physician-Patient Relationship 291
- Two-Man Corporations 293

Miscellaneous

- Advertisers 312
- American Academy of Family Physicians: 1979 Annual Meeting Agenda 245
- Book Review 244
- Classified Advertisements 312
- Council Meeting 306
- Editorial Comment: *Outlook: Look Out* 295
- Impaired Physician Program Resource List 246
- KMS Plans Ahead: Long Range Planning Sessions 297
- Kansas Press Looks at Medicine 235
- President's Message 294
- Vox Dux 309

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; **Editorial Assistant:** Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. **POSTMASTER:** Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

Do you know...

1. **Do you know** that by Incorporating your practice you could substantially save tax dollars?
2. **Do you know** you may not be receiving full benefits from Pension & Profit Sharing/Tax Shelters?
3. **Do you know** you can benefit more by having a Keogh Plan with higher contribution limits?
4. **Do you know** you may be not receiving Maximum Tax Benefits from fringe benefits?
5. **Do you know** you can plan more effective ways of reducing your Estate Asset Tax Liability?

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



Midwest Pension Planners

JOHN E. LYONS

Suite 1010 Merchants National Bank
Topeka, Kansas 66612
Phone (913) 235-5301

THE MESSAGE OF TENSION

HEADACHES

SWEATS

TENSE, TAUT MUSCLES

HYPERVENTILATION

TACHYCARDIA

PALPITATIONS

BURNING IN STOMACH

FULLNESS

FREQUENCY

to relieve psychic tension
and its functional symptoms

VALIUM[®]
(diazepam)[®]

2-mg, 5-mg, 10-mg scored tablets

VALIUM[®] (diazepam)

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states, somatic complaints which are concomitants of emotional factors, psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation, symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders, athetosis; stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Use in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss pregnancy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia.

hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110



The Kansas Press Looks at Medicine

The one-year-old plan to keep more Kansas-trained doctors in Kansas is under fire in the Senate. Boiled down to its essence, the argument against continuing the program seems to be that too many prospective young physicians attending the University of Kansas Medical School have signed up for it.

Last year, the Legislature approved free tuition for medical students who agreed to serve in Kansas after graduation for the same length of time that the state picked up their tuition. As an added inducement, students who pledged to work in underserved areas were offered a \$500-a-month living expense allotment.

Scholarship plan opponents claim the aid is costing the state far too much. They don't want an additional \$1.125 million allocation to the original \$1.5 million funding approved. The \$500 living expense allowance even has been labeled "beer money" for some medical students.

Now, \$2.625 million is a lot of money, but the shortage of physicians in Kansas, especially in remote rural areas, is a lot of problem. And the money set aside by the state shouldn't be looked at as a giveaway — it should be seen for what it is, an investment that is likely to pay generous dividends.

Although it will be six to eight years before an accurate fix can be made on how many of the new doctors will stay in Kansas, one thing is certain: The doctor shortage isn't likely to get better in the meantime. And, for the new physicians who may decide to go elsewhere after participating in the scholarship program, there is the protection of having them committed to promissory notes for the aid they receive. Any who set up practice elsewhere before their commitment to Kansas is fulfilled will be required, by law, to pay back the tuition and living expenses, plus interest. So the taxpayers would be out nothing.

Right now, there are 426 KU Med School students in the scholarship program, and 85 percent of next year's freshman class is expected to take part in it. Although that will mean more money, we think the prospects for more Kansas doctors are something to be glad about, not to eliminate.

Obviously, the plan will mean more doctors in the state, and that's what it was intended to do. And once the ratio of new doctors to Kansas' need for doctors can be computed, the Legislature can cut back proportionately on the number of scholarships by appropriating less money.

Rep. Mike Hayden, R-Atwood, chairman of the House Ways and Means Committee, knows the problems of recruiting doctors first-hand, and was active in getting the scholarship legisla-

tion passed last year. He's not surprised that the program is under fire in the Senate, where it passed by a single vote last session.

But he's confident that if the bill to end the program does get through the Senate, it will be trounced in the House, where the scholarship plan carried 118-4 last year. That's reassuring for Kansans concerned with improved health services, but it's hard to understand how the two houses could comprehend the problem so differently.

The fact there is a doctor shortage in many parts of the state should be equally clear in the Senate and the House, as should the fact that the medical scholarship program is working to correct it. It would be a shame to kill it off simply because it has worked so well. — *Wichita Eagle*, Feb. 21, 1979.

It's good to know Kansas is among the 35 states whose medical societies have recognized and are dealing with the phenomenon known as the "impaired physician." Most often that phrase refers to a doctor with a serious drinking problem, but it may also include those with other drug-related troubles.

Sometimes it's easy to forget that doctors are human, too — subject to the same emotions and weaknesses as everyone else. And while nearly every physician is seen in a favorable light, due to the respect and admiration that the profession commands, there are very real pressures there, too. In fact, with concerns of life and death, sickness and health pressing in on them, doctors probably are among the most pressured people in the world.

That those kinds of pressures can sometimes turn a physician to the temporary escape of alcoholism or drug addiction should be obvious. Since a doctor's work is critically intertwined with the well-being of his patients, it is even more important that his personal problems do not go ignored.

That's why the Kansas Medical Society's impaired physician program, like others being advocated by the American Medical Association, is fulfilling a vital role. Doctors with problems that may detract from their ability to do their jobs may be referred — by themselves, colleagues, family or friends — to the KMS program in the strictest of confidence.

From that point on, the emphasis is on help, something most doctors are used to giving, not receiving. The help they receive from the impaired physician program, when multiplied by the patients they serve, will go a long way — with everyone involved being better off for it. — *Wichita Eagle-Beacon*, Jan. 27, 1979.

DO YOU REMEMBER THESE TWO GREATS?



THIS PAIR OF BRONZE MEDALLIONS WITH RAISED FIGURES OF BOBBY JONES AND BABE RUTH CAN BE YOURS IN EXCHANGE FOR FIVE MINUTES.

SEND A LIST OF YOUR ANTICIPATED MEDICAL EQUIPMENT NEEDS FOR YOUR OFFICE FOR 1979 TO JOE SHERMAN AT 501 GAGE BLVD. TOPEKA, KANSAS, 66601.

YOUR MUNNS REPRESENTATIVE WILL DELIVER TO YOU YOUR SET OF MEDALLIONS....IT'S THAT EASY.

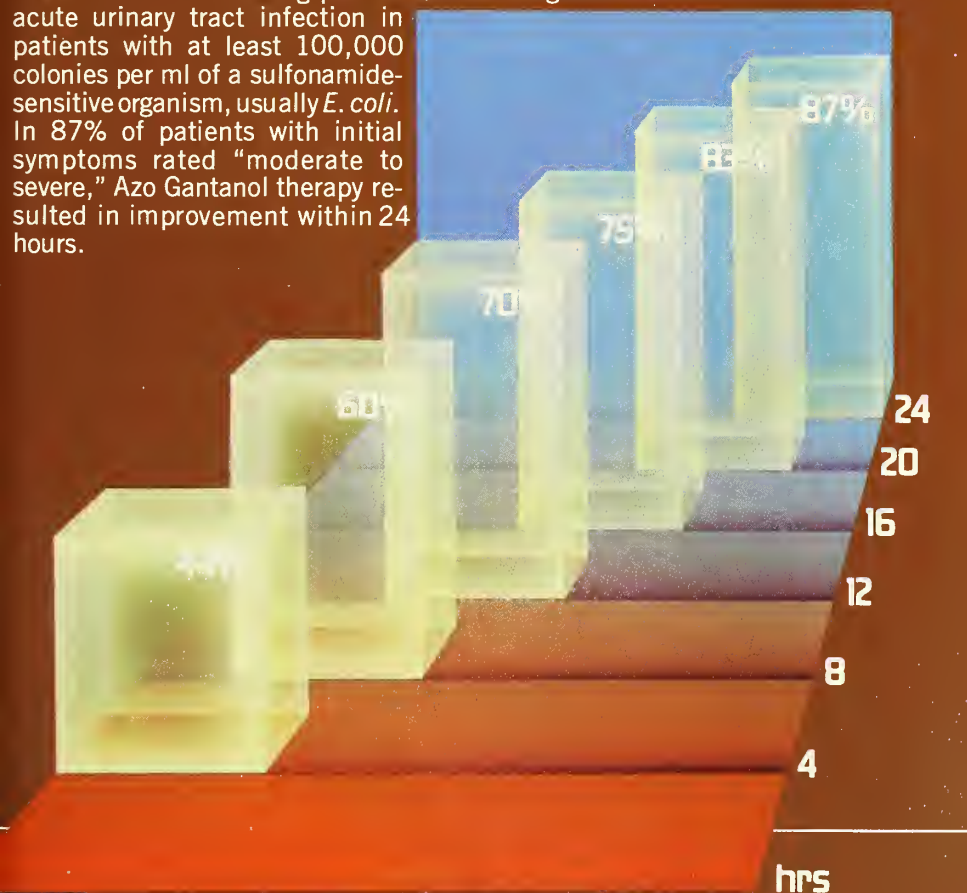
THIS OFFER EXPIRES JUNE 30, 1979, AND QUANTITIES ARE LIMITED SO DON'T DELAY!



Important data on the pain of acute cystitis:

In 87% of patients studied (303 of 349), Azo Gantanol[®] reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli*. In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Fast pain relief plus effective antibacterial action

Azo Gantanol[®]

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for
the pain

for
the pathogens

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note:** Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides. Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought.

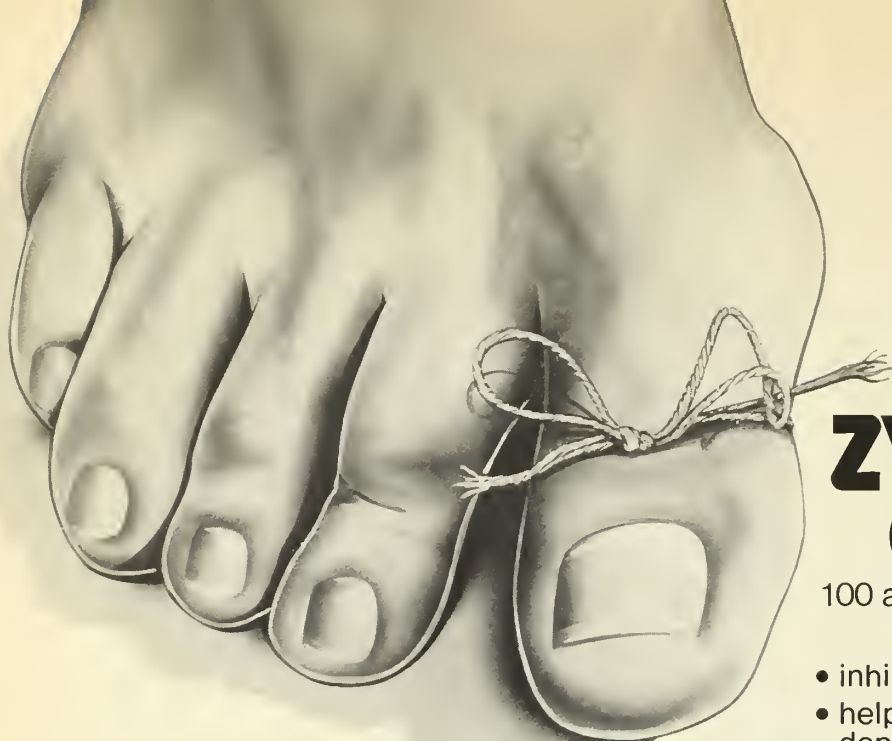
After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110



A reminder

ZYLOPRIM[®]

(allopurinol)

100 and 300 mg scored Tablets

- inhibits uric acid formation
- helps prevent urate crystal depositions in synovia
- reduces risk of uric acid lithiasis

INDICATIONS AND USE: This is not an innocuous drug and strict attention should be given to the indications for its use. Pending further investigation, its use in other hyperuricemic states is not indicated at this time.

Zyloprim[®] (allopurinol) is intended for:

1. treatment of gout, either primary, or secondary to the hyperuricemia associated with blood dyscrasias and their therapy;
2. treatment of primary or secondary uric acid nephropathy, with or without accompanying symptoms of gout;
3. treatment of patients with recurrent uric acid stone formation;
4. prophylactic treatment to prevent tissue urate deposition, renal calculi, or uric acid nephropathy in patients with leukemias, lymphomas and malignancies who are receiving cancer chemotherapy with its resultant elevating effect on serum uric acid levels.

CONTRAINDICATIONS: Use in children with the exception of those with hyperuricemia secondary to malignancy. The drug should not be employed in nursing mothers.

Patients who have developed a severe reaction to Zyloprim should not be restarted on the drug.

WARNINGS: ZYLOPRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. In some instances a skin rash may be followed by more severe hypersensitivity reactions such as exfoliative, urticarial and purpuric lesions as well as Stevens-Johnson syndrome (erythema multiforme) and very rarely a generalized vasculitis which may lead to irreversible hepatotoxicity and death.

A few cases of reversible clinical hepatotoxicity have been noted and in some patients asymptomatic rises in serum alkaline phosphatase or serum transaminase have been observed. Accordingly, periodic liver function tests should be performed during the early stages of therapy, particularly in patients with pre-existing liver disease. Patients should be alerted to the need for due precautions when engaging in activities where alertness is mandatory.

Nevertheless, iron salts should not be given simultaneously with Zyloprim. This drug should not be administered to immediate relatives of patients with idiopathic hemochromatosis.

In patients receiving Purinethol[®] (mercaptopurine) or Imuran[®] (azathioprine), the concomitant administration of 300-600 mg of Zyloprim per day will require a reduction in dose to approximately one-third to one-fourth of the usual dose of mercaptopurine or azathioprine. Subsequent adjustment of doses of Purinethol or Imuran should be made on the basis of therapeutic response and any toxic effects.

Usage in Pregnancy and Women of Childbearing Age. Zyloprim[®] (allopurinol) should be used in pregnant women or women of childbearing age only if the potential benefits to the patient are weighed against the possible risk to the fetus.

PRECAUTIONS: Some investigators have reported an increase in acute attacks of gout during the early stages of allopurinol administration, even when normal or sub-normal serum uric acid levels have been attained.

It has been reported that allopurinol prolongs the half-life of the anticoagulant, dicumarol. This interaction should be kept in mind when allopurinol is given to patients already on anticoagulant therapy, and the coagulation time should be reassessed.

A fluid intake sufficient to yield a daily urinary output of at least 2 liters and the maintenance of a neutral or, preferably, slightly alkaline urine are desirable to (1) avoid the theoretic possibility of formation of xanthine calculi under the influence of Zyloprim therapy and (2) help prevent renal precipitation of urates in patients receiving concomitant uricosuric agents.

Patients with impaired renal function require less drug and should be carefully observed during the early stages of Zyloprim administration and the drug withdrawn if increased abnormalities in renal function appear.

In patients with severely impaired renal function, or decreased urate clearance, the half-life of oxipurinol in the plasma is greatly prolonged. Therefore, a dose of 100 mg per day or 300 mg twice a week, or perhaps less, may be sufficient to maintain adequate xanthine oxidase inhibition to reduce serum urate levels. Such patients should be treated with the lowest effective dose, in order to minimize side effects.

Mild reticulocytosis has appeared in some patients.

As with all new agents, periodic determination of liver and kidney function and complete blood counts should be performed especially during the first few months of therapy.

ADVERSE REACTIONS:

Dermatologic: Because in some instances skin rash has been followed by severe hypersensitivity reactions, it is recommended that therapy be discontinued at the first sign of rash or other adverse reaction (see WARNINGS). Skin rash, usually maculopapular, is the adverse reaction most commonly reported.

Exfoliative, urticarial and purpuric lesions, Stevens-Johnson syndrome (erythema multiforme) and toxic epidermal necrolysis have also been reported.

A few cases of alopecia with and without accompanying dermatitis have been reported.

In some patients with a rash, restarting Zyloprim (allopurinol) therapy at lower doses has been accomplished without untoward incident.

Gastrointestinal: Nausea, vomiting, diarrhea, and intermittent abdominal pain have been reported.

Vascular: There have been rare instances of a generalized hypersensitivity vasculitis or necrotizing angitis which have led to irreversible hepatotoxicity and death.

Hematopoietic: Agranulocytosis, anemia, aplastic anemia, bone marrow depression, leukopenia, pancytopenia and thrombocytopenia have been reported in patients, most of whom received concomitant drugs with potential for causing these reactions. Zyloprim[®] (allopurinol) has been neither implicated nor excluded as a cause of these reactions.

Neurologic: There have been a few reports of peripheral neuritis occurring while patients were taking Zyloprim. Drowsiness has also been reported in a few patients.

Ophthalmic: There have been a few reports of cataracts found in patients receiving Zyloprim. It is not known if the cataracts predated the Zyloprim therapy. "Toxic" cataracts were reported in one patient who also received an anti-inflammatory agent; again, the time of onset is unknown. In a group of patients followed by Gutman and Yü for up to five years on Zyloprim therapy, no evidence of ophthalmologic effect attributable to Zyloprim was reported.

Drug Idiosyncrasy: Symptoms suggestive of drug idiosyncrasy have been reported in a few patients. This was characterized by fever, chills, leukopenia or leukocytosis, eosinophilia, arthralgias, skin rash, pruritus, nausea and vomiting.

OVERDOSAGE: Massive overdosing, or acute poisoning, by Zyloprim has not been reported.

HOW SUPPLIED: 100 mg (white) scored tablets, bottles of 100 and 1000; 300 mg (peach) scored tablets, bottles of 30, 100 and 500. Unit dose packs for each strength also available.

Complete information available from your local B. W. Co. Representative or from Professional Services Department PML.

U.S. Patent No. 3,624,205 (Use Patent)



Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

COMPATIBILITY



Does it influence your choice of a peripheral/cerebral vasodilator*?

- Vasodilan—compatible with coexisting diseases
- Vasodilan—compatible with concomitant therapy
- Vasodilan—compatible with your total regimen for vascular insufficiency

*Indications: Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, the FDA has classified the indications as follows:

Possibly Effective:

1. For the relief of symptoms associated with cerebral vascular insufficiency.
2. In peripheral vascular disease of arteriosclerosis obliterans, thromboangitis obliterans (Buerger's Disease) and Raynaud's disease.

Final classification of the less-than-effective indications requires further investigation.

Composition: Vasodilan tablets, isoxsuprine HCl, 10 mg. and 20 mg. Vasodilan injection, isoxsuprine HCl, 5 mg., per ml.

Dosage and Administration: Oral: 10 to 20 mg., three or four times daily. Intramuscular: 5 to 10 mg. (1 or 2 ml.) two or three times daily. Intramuscular administration may be used initially in severe or acute conditions.

Contraindications and Cautions: There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding.

Parenteral administration is not recommended in the presence of hypotension or tachycardia.

Intravenous administration should not be given because of increased likelihood of side effects.

Adverse Reactions: On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.

Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.

Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.

Supplied: Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose; Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose; Injection, 10 mg. per 2 ml. ampul, box of six 2 ml. ampuls.

U.S. Pat. No. 3,056,836

VASODILAN[®]

(ISOXSUPRINE HCl)
20-mg tablets

Mead Johnson PHARMACEUTICAL DIVISION

© 1978 MEAD JOHNSON & COMPANY • EVANSVILLE, INDIANA 47721 U.S.A. MJL7-4268

**When painful spasm
is the presenting
symptom...**



in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

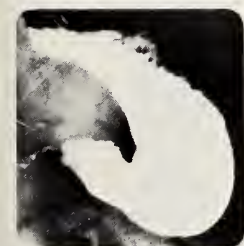
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

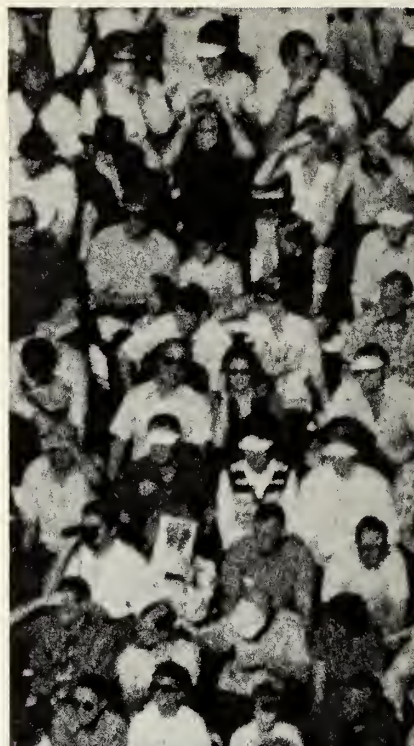
CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis, urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSAGE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg. capsule and syrup. *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg. *Adults:* 1 tablet three or four times daily. Bentyl Injection. *Adults:* 2 ml. (20 mg.) every four to six hours intramuscularly only. **NOT FOR INTRAVENOUS USE.** **MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanechol chloride USP) should be used.

Product Information as of October, 1978.

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Decatur, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.



MSD
MERCK
SHARP
DOHME

ALDOMET[®]

(METHYLDOPA/MSD)

TABLETS: 500 mg, 250 mg, and 125 mg

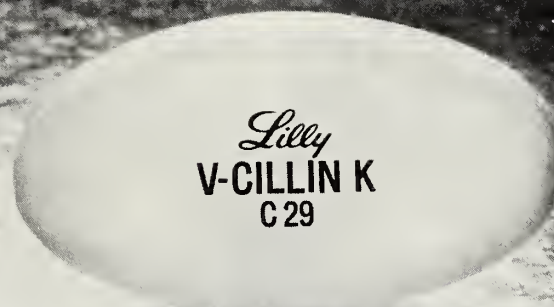
Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

V-Cillin K[®]

penicillin V potassium

is the most
widely prescribed
brand of oral penicillin



Tablets
125, 250, and 500 mg*
Oral Solution
125 and 250 mg*/5 ml

V-Cillin K[®] penicillin V potassium

Description: V-Cillin K is the potassium salt of penicillin V. This chemically improved form combines acid stability with immediate solubility and rapid absorption.

Indications: For the treatment of mild to moderately severe pneumococcal respiratory tract infections and mild staphylococcal skin and soft-tissue infections that are sensitive to penicillin G. See the package literature for other indications.

Contraindication: Previous hypersensitivity to penicillin.

Warnings: Serious, occasionally fatal, anaphylactoid reactions have been reported. Some patients with penicillin hypersensitivity have had severe reactions to a cephalosporin; inquire about penicillin, cephalosporin, or other allergies

before treatment. If an allergic reaction occurs, discontinue the drug and treat with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

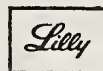
Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin.

(102175)

***Equivalent to penicillin V.**

Additional information available to the profession on request.



Eli Lilly and Company
Indianapolis, Indiana 46206

900416

WHY SHOULD A PHYSICIAN BE CONCERNED ABOUT HOSPITAL MANAGEMENT?

Because we think it affects your patient's care.

Employee confidence in hospital management improves morale and attitude: two major prescriptions in the care your patients receive.

Shared Service Systems, a non-profit organization of over 90 health care institutions in the Midwest, can provide complete management for your facility including a highly trained administrator and back-up support if and when required.

At Shared Service Systems, our management philosophy is to provide effective modern management to your hospital so that your patients will continue to receive local, cost effective health services.

We thought you should know about us.

for more information
contact



SHARED SERVICE SYSTEMS
1725 So. 20th Street
Omaha, Nebraska 68108
or Phone: (402) 346-9008

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

**IN KANSAS
YOUR INDEPENDENT AUTHORIZED DEALERS ARE:**

Charlie Gillum
Beltone Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Beltone Hearing Aid Service
705 Commercial
Emporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Beltone Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Beltone Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Beltone Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Beltone Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street • Chicago, Illinois 60646

An American Company

HEALTH CENTRAL NEEDS FAMILY PRACTITIONERS INTERNISTS OB/GYN SPECIALISTS PEDIATRICIANS

A federally-qualified, staff model health maintenance organization opening January, 1979.

Nebraska's capital city of 200,000, home of the University of Nebraska.

This represents a ground floor opportunity to practice under ideal conditions in a modern new facility and three excellent hospitals in the community.

Salary commensurate with experience.

Liberal fringe benefit package.

Malpractice insurance paid.

Relocation expenses paid.

Send curriculum vitae, including salary requirements to:

JOHN L. LUCAS, M.D.
Medical Director
HEALTH CENTRAL
17th & N Street
Lincoln, NE 68508

For immediate attention, call: (402) 475-7000

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

TEST	RESULT	REFERENCE
HAEMOGLOBIN	15.1	12-16
HAEMATOCRIT	45.4	37-47
RED BLOOD CELLS	4.8	4.2-5.4
WHITE BLOOD CELLS	11,200	4,800-10,800
DIFFERENTIAL		
NEUTROPHILS	55	40-60
LYMPHOCYTES	35	20-40
MONOCYTES	10	2-10
EOSINOPHILS	0	1-5
PLATELETS	250,000	150,000-400,000
PROTHROMBIN TIME	12.5	11-14
PTT	35	25-35
URIC ACID	5.0	2.4-6.8
BUN	10.0	8-12
CREATININE	1.0	0.7-1.2
GLUCOSE	100	70-110
ALBUMIN	4.5	3.5-5.0
BILIRUBIN	1.2	0.1-1.2
ASAT	150	10-40
ALP	100	30-100
GOT	20	10-20
GPT	15	10-20
LDH	200	100-250
AMYLASE	100	30-100
LIPID	150	100-200
CHOLESTEROL	200	150-250
TRIGLYCERIDES	100	50-150
FASTING GLUCOSE	100	70-110
HbA1C	5.0	4.0-6.0
IRON	100	60-150
TOTAL IRON BINDING CAPACITY	300	200-300
TRANSFERRIN SATURATION	33	25-35
PERCUTANEOUS O ₂	95	95-100
PERCUTANEOUS CO ₂	35	35-45
PERCUTANEOUS pH	7.35	7.35-7.45
PERCUTANEOUS PCO ₂	40	35-45
PERCUTANEOUS PO ₂	80	75-85
PERCUTANEOUS LACTATE	2.0	0.5-2.0
PERCUTANEOUS URIC ACID	5.0	2.4-6.8
PERCUTANEOUS BUN	10.0	8-12
PERCUTANEOUS CREATININE	1.0	0.7-1.2
PERCUTANEOUS GLUCOSE	100	70-110
PERCUTANEOUS ALBUMIN	4.5	3.5-5.0
PERCUTANEOUS BILIRUBIN	1.2	0.1-1.2
PERCUTANEOUS ASAT	150	10-40
PERCUTANEOUS ALP	100	30-100
PERCUTANEOUS GOT	20	10-20
PERCUTANEOUS GPT	15	10-20
PERCUTANEOUS LDH	200	100-250
PERCUTANEOUS AMYLASE	100	30-100
PERCUTANEOUS LIPID	150	100-200
PERCUTANEOUS CHOLESTEROL	200	150-250
PERCUTANEOUS TRIGLYCERIDES	100	50-150

Ka M P A C

KANSAS MEDICAL POLITICAL ACTION COMMITTEE

1300 TOPEKA AVE.



TOPEKA, KANSAS 66612

Dear Doctor:

As we are all aware, the relationship between the medical profession and government is not ideal but rather at times characterized by hostility and unilateral decisions. Each of us has our own opinion as to who is to blame for this situation; however, the problem continues.

The result of this discord is increased stress in the already hectic physician's life as well as a situation where neither the medical profession nor the government feel satisfied with their progress toward their goals. This leaves both sides unhappy and promotes the continued lack of cooperation.

KaMPAC, with your support, can and will help bridge this gap. KaMPAC will encourage and financially assist candidates of integrity, talent, capability, and a feeling of good will toward an open communication between the medical profession and government.

Sincerely,

Ronald Davis, M.D.
Chairman



WHEN IT'S YOUR KID: *The Crisis of Drugs*, by Glenn O. Bair, M.D., Charlotte Elder, R.N., and Phill Wallsmith, S.W., The Lowell Press, Kansas City, 1978. 99 pages. \$8.95.

For the adolescent who has crossed through the distorted looking glass of drug abuse, a potentially crucial factor is parental reaction. Parents may be both part of the problem and part of the solution, but to be the latter, they need help in the form of both insight and knowledge. Such help has not been readily available to the average parent. *When It's Your Kid* is a significant response to this need.

The authors have drawn on their extensive experience in the field of drug abuse counseling to compile a small volume in easy-to-read format, much like a personal conversation, with the added advantage of availability for future reference. The book is structured to be immediately supportive to the parent in the throes of crisis. It defines specific procedure for coping with parental panic; it then outlines a progression toward solution of the problems that engendered

the teenager's drug involvement, with emphasis on the necessity for professional assistance.

It is written simply but not simplistically; it is well within the grasp of even those with limited education. Its basic psychological insight imparts preventive value for reading by any parent wishing to avoid the anguish of drug involvement in the family.

"The most natural drug-use prevention program for a child is to feel needed," state the authors in giving perspective to simple truth. And there is encouragement for the parent: "Whatever your mistakes and successes in raising your children, it came about with a great emotional investment and a lot of caring and work and anguish. Keep in mind that no single given crisis represents the success or failure of your entire relationship with your child."

A vast body of both technical and practical information is available to the professionals who will eventually be encountered by the adolescent abuser. Now Bair, Elder, and Wallsmith have provided a significant resource for the teenager's most intimate and enduring support system — the family. — E.B.

USE YOUR MEDICAL LIBRARIES

YOUR LIBRARIAN WILL BE
HAPPY TO ASSIST YOU

Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

American Academy of Family Physicians

1979 Annual Meeting Agenda

THURSDAY, JUNE 7, 1979

(Sports Day)

- 8:00 **Registration**, Lobby, Hilton Inn
1:00 **Golf**, Crestview Country Club
(Dr. Donald Gessler in charge.
Tournaments for men, women, and mixed foursomes.)
Tennis, Wichita Raquet Club
(Dr. Stanley Kardatzke in charge)

FRIDAY, JUNE 8, 1979

- 7:00 **Registration** all day, Lobby, Hilton Inn
8:00 **Minicourses** in the Oak, Walnut, Cottonwood, Pecan and Maple Rooms,
and rooms 104 and 105, Hilton Inn.
9:45 Coffee break
10:00 **Minicourses** continue
12:00 Lunch (to be individually arranged)
1:00 **Minicourses** continue
2:45 Coffee break
3:00 **Minicourses** continue
(Evening free for individual activity, such as Crown Dinner Theatre.)

SATURDAY, JUNE 9, 1979

- 7:00 **Early Bird Breakfast**, Hilton Inn, with Guest Legislators
Registration all day, Lobby, Hilton Inn
9:00 **Business Meeting**
Election of officers and other business
12:00 **Luncheon**
Edward A. Schauer, M.D., Vice President, American Association of
Family Practice, *Speaker*
Spouses welcome.
1:00 **Scientific Program**
*The Natural History of a Family, or Life After 17, with Focus on the
Patient in the Practitioner's Office and Physicians and Their Families.*
Spouses and office nurses welcome to attend at no charge.
6:30 **Cocktails**
7:30 **Dinner**
Installation of new officers by Edward A. Schauer, M.D.
9:00 **Entertainment**
Gary Ellison, Jazz Pianist.

Friday, 10:30 — Special spouses program — Chinese cooking demonstration,
place to be announced.

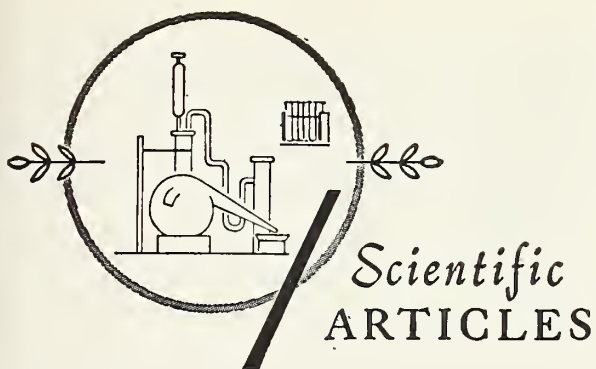
Program acceptable for 14 prescribed hours by the American Academy of Family Physicians.

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	(913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission ..	(913) 362-4040
Roy Neil, M.D., Hays	(913) 628-3215
George M. Penn, M.D., Topeka	(913) 234-9566
Ivan Rhodes, M.D., Wichita	(316) 685-1291
Alex Scott, M.D., Junction City	(913) 238-2518
M. C. Spencer, M.D., Topeka	(913) 234-3451
Max Teare, M.D., Garden City	(316) 276-7689
Kermit Wedel, M.D., Minneapolis	(913) 392-2144
Kansas Medical Society, Topeka	(913) 235-2383/235-3619



Pancreatic/Duodenal Trauma

The Use of Serosal Patch

A. K. TAYIEM, M.D., *Atchison*

PANCREATIC INJURY was first reported in England in 1827.¹ An intoxicated woman, struck by a stagecoach wheel, died a few hours later. The autopsy revealed that she had suffered pancreatic and duodenal rupture.

One of the earliest known survivors of pancreatic injury was reported in 1868, "The patient had lacerated protruding pancreas which was ligated and excised."¹ By 1903, Mikulicz had collected 45 cases of pancreatic injury, and concluded "In severe injuries of the pancreas, operation gives the best chance for survival."¹

The first survivor of a complete tear of the pancreas was credited to Garre in 1905 who treated the injury by suture apposition of the gland. The patient developed a fistula, which closed spontaneously in six months.¹

As surgeons throughout the world encountered an increasing number of patients with upper abdominal trauma, the treatment of pancreatic and duodenal injuries became a subject of considerable interest and controversy.²⁻⁵ Pancreatic injuries account for 1-2 per cent of all abdominal trauma, with penetrating trauma responsible for two-thirds of the cases. The mortality rate has been reduced from 50 to 16 per cent for shot gun and blunt trauma. The mortality rate following stab wounds is about 8 per cent. The mortality rate for injuries in the region of the head is

The treatment of pancreatic and duodenal injuries has been the subject of considerable interest and controversy. Various surgical techniques are discussed. A technique of using a serosal patch is presented.

greater than for those in the tail — 22 and 12 per cent respectively.¹ Twenty per cent of the patients have combined pancreatic duodenal injuries with 27 per cent mortality rate.

Pancreatic Injuries

In the case of trauma such as steering wheel injury, examination usually reveals a bruise of the upper abdomen or site of a penetrating wound. Serum amylase is elevated in 90 per cent of patients with blunt injuries and in 25 per cent of patients with penetrating injuries.¹ Forty per cent of patients may present with shock; 50 per cent or more will have retroperitoneal organ or vessel injury. X-ray is not very helpful; sonogram may show retroperitoneal cystic mass.

If pancreatic or duodenal trauma is suspected, exploration of the abdomen and pancreatic area should be done. Contusion of the pancreas with an intact capsule should be treated with drainage alone. Sump drainage is more effective than Penrose in preventing complications — 6 and 29 per cent respectively.^{2, 6} A Foley catheter can be used for sump

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. Tayiem, 1225 No. Second Street, Atchison, KS 66002.

drainage by removing the balloon and cutting off the end of the side arm thus creating an air vent and preventing a vacuum.¹ This method of treatment can be done in approximately 80 per cent of cases.

Possible complications following this operation include major fistula and pseudocyst. A major fistula which drains for more than a month occurs in 4.5 per cent of cases and usually closes spontaneously within six months — especially with hyperalimentation — and surgery is rarely required.^{1, 7}

Pseudocyst occurs in 1.5 per cent of cases. Usually serum amylase will return to normal following the operation and then start increasing after six days, signaling development of the cyst. Spontaneous resolution occurs in 25 per cent of patients;⁸ when it does not, surgical drainage can be done at a later date.

Laceration without major duct destruction should be sutured and drained. Laceration with major duct disruption in the neck, body, or tail should be treated by distal pancreatectomy (12% of cases), rather than with intestinal pancreatic anastomosis because: exocrine or endocrine insufficiency is rare with resection; resection is faster; there is no bacterial contamination; pancreatic enzymes are activated only in the presence of bowel contents; and fistulas are less frequent (5.8%) than in cases with pancreatic intestinal anastomosis (25.0%).¹

The pancreatic stump is managed by insertion into the pancreatic duct of a polyethylene catheter which is brought to the outside either directly or through the stomach;⁹ or by pancreatogastrostomy.¹⁰ The advantages of the latter procedure are proximity of the two structures, thickness and strength of the stomach wall, and the avoidance of activation of pancreatic enzymes in the stomach. A third method — the serosal patch — will be discussed later.

Duct disruption — when not complete — can be managed by onlay Roux-en-Y limb sutured over the rent, and this is done in approximately 4 per cent of the cases. Fistulas are more apt to occur in 25 per cent of the cases. Intestinal ileus for this limb usually persists for the first five to seven days, so decompression is mandatory.

Complete transection of the neck can be managed by closing the proximal end with a non-absorbable suture and anastomosing the distal end to Roux-en-Y of the jejunal loop. A complication of this operation may be a lesser sac and pancreatic abscess in 30 per cent of the cases.

Severe pancreatic duodenal injury is managed by pancreaticoduodenectomy in only 2 per cent of the cases. The mortality rate is approximately 30 per

cent. J. Sturn¹¹ advocated pancreaticoduodenectomy if one of the following conditions existed: (1) loss of vascularity to the C loop of the duodenum; (2) injury to the common bile duct, pancreatic duct in the head, or injury to the ampulla; (3) injury to the head of the pancreas; or (4) severe injury of the duodenum not amenable to repair.

To reduce the fistula after pancreaticoduodenectomy, Lima¹² advocated a new technique for reconstruction following pancreaticoduodenectomy in which the biliary is separated from the pancreatic anastomosis. Modified pancreaticoduodenectomy is described by Powis *et al.*¹³ in three patients without complication, and they did not develop ulcers, diarrhea, post-prandial discomfort, or fistulas to the extent of those patients with radical pancreaticoduodenectomy. The procedure includes bilateral vagotomy, antrectomy, cholecystectomy, partial pancreatectomy, and partial duodenectomy to the right of the superior mesenteric vessels. Following closure of the duodenal stump, anastomosis of common bile duct to the antecolic loop of the jejunum and gastrojejunostomy are performed. The pancreatic stump is closed by dissecting and ligating the duct with #0-Silk. Silk mattress sutures are used to close the cut surface of the pancreas and a #2-Stainless steel suture is tightened around the pancreas 1 cm from the cut surface. To reduce ulcers following pancreaticoduodenectomy, Warren¹⁴ recommends bilateral vagotomy and 65 per cent gastrectomy. Traverso and Longmire¹⁴ introduced a new technique of pancreaticoduodenectomy in which the pylorus is preserved.

Other complications of pancreatic injury or operation on the pancreas are hemorrhage and pancreatitis, the latter presenting with the usual signs and symptoms of pancreatitis and treated accordingly.

In reviewing 500 cases since 1950, R. Jones¹⁵ concluded that:

1. Mortality in pancreatic-duodenal injuries is related to shock, location of injury, and associated injuries;

2. Serum amylase is not a reliable indicator of pancreatic injury;

3. Distal resection should be done for major injuries to the left of superior mesenteric artery and internal drainage for injuries to the right of the superior mesenteric artery;

4. Morbidity is usually due to missed major duct injury; and

5. Diabetes occurs if more than 80 per cent of the pancreas is resected.

Case History

A 44-year-old white female, who was injured when her car was struck by a truck, was brought to the emergency room with abdominal pain. Examination revealed bruises and mild tenderness in the upper abdomen. Abdominal x-ray was normal; chest x-ray showed fractured left 7th and 8th ribs. On admission, examination revealed hemoglobin, 12.4; WBC, 8,800 with polys 81 and bands 13. The following morning, hemoglobin was 11.6; WBC, 6,500 with polys 91 and bands 5. In the afternoon, serum amylase was 1,620 and urine amylase was 10,000. At that time, the patient was experiencing severe pain with rigidity. Exploration done that evening revealed transection of the pancreas to the right of the uncinate process with ductal disruption and crushing injury, and evidence of fatty necrosis and mild saponification. Liver laceration on the posterior surface of the right lobe measured one inch in diameter, and splenic capsular laceration was noted. Distal pancreatectomy with splenectomy was performed. The pancreatic stump was closed with #00-GI Silk suture and the duct was ligated with #0-Silk suture. Retrocolic jejunal loop was laid over the stump and sutured to it anteriorly and posteriorly. Shirley sump and Penrose drain were left near the pancreatic area and another Shirley sump and drain were placed in the splenic area. The Shirley sump was irrigated continuously with 2 gm Keflin and normal saline. Postoperatively, the patient was febrile, and subcutaneous abscess — diagnosed by Gallium scan — complicated the recovery. The patient was re-explored one month later, and at that time an inflammatory mass involving the colon, duodenum, pancreatic area, stomach and necrotic pancreatic tissue was excised. Culture grew *Enterococcus cloacae*. The postoperative course was uneventful, and the patient was dismissed six weeks following admission. Two-hour postprandial blood sugar was normal, and the patient exhibited no exocrine insufficiency (*Figure 1*).

Duodenal Injuries

Duodenal wounds range from single stab wounds to bursting or crushing injuries. Blunt trauma frequently is associated with injuries to surrounding structures. Mortality and morbidity rates remain high despite advanced resuscitation and surgical techniques.¹⁶ A delay of 24 hours before surgery is associated with 65-per cent mortality; patients operated within 24 hours of the time of trauma have only 15-per cent mortality rate.¹⁷

Indices of duodenal injuries include blunt trauma



Figure 1. Upper gastrointestinal x-ray one month post-operatively showing retrocolic jejunal serosal patch over pancreatic stump.

history, fever, signs of high intestinal obstruction, third space fluid loss with occasional jaundice, and elevated amylase. X-ray of the abdomen may show lumbar scoliosis or lordosis, air outside the duodenum around the kidney, and obliteration of the psoas shadow. Upper gastrointestinal x-ray will localize the site of rupture. In cases of penetrating trauma, bile staining of adjoining tissue, retroperitoneal hematoma, or crepitations are usually detected.

Simple laceration can be closed primarily and drained.

Severe or combined pancreatic/duodenal injuries should be treated by duodenal defunctionalization and repair. Cleveland and Waddell¹⁸ advocated transection of the duodenum at the site of the injury, closure of both duodenal ends and gastrojejunostomy, but the proximal duodenal stump is not well drained because of the antiperistolic direction of drainage. Thal and Wilson⁵ advocated pancreaticoduodenectomy; Donovan and Hagan¹⁹ treated their patients' injuries with duodenal wound closure and bilateral vagotomy, antrectomy, duodenostomy,

and gastrojejunostomy. Serosal patch may be used to close large wounds to prevent stenosis; the jejunal loop is laid over the duodenal wound anteriorly.

An injury to the first part of the duodenum can be treated by vagotomy, antrectomy or gastrojejunostomy, and tube duodenostomy is added if stump closure is difficult or insecure.

Injury to the fourth part of the duodenum can be treated by distal duodenal resection and duodenojejunostomy.

Primary closure of extensive duodenal wounds may be complicated with lateral duodenal fistula, retroperitoneal hemorrhage, and sepsis. Sump drainage is mandatory; gastrojejunal decompression can be achieved by either nasogastric tube, gastrostomy, or jejunostomy.

Retroperitoneal duodenal rupture usually follows some type of blunt trauma received during athletic activities, fights, or falls. Cocke and Meyer²⁰ postulated that this injury results from rapid increase in intraluminal pressure between the pylorus and ligation of Treitz.

Diagnosis is usually difficult; history of trauma may be vague with minimal abdominal pain, nausea and vomiting, and hematemesis reported. Signs range from mild to severe tenderness in the upper abdomen, typical of ruptured viscus. Intra- or retroperitoneal air of blurred psoas outlines should be sought in abdominal x-rays; upper gastrointestinal x-ray will localize the site of injury. Laparotomy should be performed as soon as such injury is suspected. Cocke and Meyer²⁰ pointed out that duodenal rupture was not recognized at laparotomy in 15 per cent of cases. The mortality rate in these patients was approximately 70 per cent. Treatment is usually primary closure and drainage. Complications include fistula and sepsis; to prevent these complications, a retroperitoneal flap is used to reinforce the anterior wall closure of the duodenum as was done in our case.

Case History

A 9-year-old white female was brought to the emergency room following a fall from a bicycle. Abrasion of the face and lower chest were noted. Central nervous system examination was normal; abdomen was soft, with slight tenderness in the upper portion. The patient was admitted for observation. The next morning she vomited 500 cc dark colored material, and the abdomen was found to be rigid and tender. WBC showed 20,800 with polys 89 and bands 20. Temperature on admission was 37.2C; the following morning, 38.3C. Abdominal x-ray revealed obliteration of the psoas shadow outline.

Minimal scoliosis and lordosis due to the spasm of abdominal muscle was noticed. Some gas-distended loops of the small bowel also were evident. Exploration revealed serosal peritonitis generalized with fluid in the abdominal cavity. A meticulous search revealed retroperitoneal duodenal rupture, and the duodenum was transected transversely; the hole admitted two fingers with the edges macerated. Following debridement of the edges, closure of the duodenum was carried out in two layers transversely. Posterior abdominal peritoneal flap was developed and sutured over the duodenum to reinforce the closure. Two Shirley sumps and two Penrose drains were placed laterally to the peritoneum. Culture of the peritoneal fluid grew *Enterococcus* and *Clostridia* perfringens. Sump irrigation was done with normal saline and Keflin. A nasogastric tube was utilized for decompression. The postoperative course was uneventful, and the patient was dismissed ten days following surgery.

Intramural Duodenal Hematoma

Intramural duodenal hematoma is usually caused by a nonpenetrating abdominal trauma. It is unusual, but has been encountered more frequently in recent years.¹⁸ The patient usually exhibits clinical findings of upper intestinal obstruction; occasionally common bile duct or pancreatic ducts may be occluded.

Diagnosis is usually delayed, but can be made with an upper gastrointestinal x-ray which presents a typical appearance of coiled spring sign. The abdominal x-ray may also present with double bubble sign.

If intramural duodenal hematoma is suspected or confirmed, exploratory laparotomy should be done. The incision of the serosa over the hematoma and evacuation of clots is sufficient in most cases. Duodenal decompression is required for several days. Gastrostomy or jejunostomy may be used if the nasogastric tube is insufficient.

References

1. Shires, G. T.: Abdominal pancreatic and duodenal trauma. *Critical Surgical Care*. Stratton Intercontinental Medical Book Corporation, pp. 109-114, 1977.
2. Baker, R. J.; Dippel, W. F. and Freeark, R. J.: The surgical significance of trauma to the pancreas. *Arch. Surg.* 86:1038, 1963.
3. Freeark, R. J. et al.: Traumatic disruption of the head of the pancreas. *Arch. Surg.* 91:5, 1965.
4. Jones, R. C. and Shires, G. T.: The management of pancreatic injuries. *Arch. Surg.* 90:502, 1965.
5. Thal, A. P. and Wilson, R. F.: A pattern of severe trauma to the region of the pancreas. *Surg. Gynecol. Obstet.* 119:773, 1969.

(Continued on page 292)

Spastic Ileus

A Review

J. E. BOSILJEVAC, M.D.,* *Wichita*

GENERAL SURGEONS have been concerned with intestinal obstruction for years. In his textbook, *Diagnosis of Surgical Disease*, Shackelford¹ divides intestinal obstruction into functional and organic types. Included in his functional classification he lists dynamic and adynamic ileus. Dynamic ileus — also referred to as “spastic ileus” — is not commonly appreciated as a cause of intestinal obstruction. In this paper, two cases of spastic ileus of the colon are presented with a review of the literature and discussion of the pathophysiology of spastic ileus.

Case Reports

Case One: A 74-year-old white female developed abdominal distension seven days after left pneumonectomy and mediastinal lymph node dissection for epidermoid carcinoma. Her postoperative course had been unremarkable and she had been eating for five days — three on a regular diet. No nausea was present; she was afebrile and abdominal examination revealed a distended abdomen with active bowel sounds. Complete blood count (CBC) and electrolytes were within normal limits. Initial x-rays were compatible with adynamic ileus, but over the next 24 hours she developed marked colonic distension. Barium enema revealed no organic lesions (*Figures 1 and 2*). She was kept NPO. Enemas and a colon tube were used for symptomatic relief. Maximum cecal diameter was 9 cm and tenderness in the right lower quadrant was not noted on follow-up examinations. Over the next four days the abdominal distension abated and recovery was uneventful.

Case Two: A 19-year-old negro male presented to the emergency room with marked abdominal distension. History was unremarkable and bowel sounds were present. Abdominal x-rays revealed marked colonic distension with a cecal diameter of 15 cm. His clinical course deteriorated with increasing ab-

Dynamic ileus — also referred to as spastic ileus — is not commonly appreciated as a cause of intestinal obstruction. After early reports of spastic ileus, a syndrome of pseudo-obstruction of the colon (Ogilvie's syndrome) was described. Although not generally appreciated as such, this syndrome appears to be spastic ileus occurring in the colon. Two cases are presented and a review of the literature and pathophysiology of spastic ileus follow.

dominal distension and marked right lower quadrant tenderness. A cecostomy was performed. The ileus abated over the next seven to ten days. Further evaluation included excisional biopsy of non-tender, firm groin nodes which revealed periarteritis. His abdomen softened and the cecostomy tube was removed. The patient was then transferred to the medical service for further treatment.

Discussion

Spastic ileus has fascinated clinicians for years, and has been called “spastic ileus,”² adynamic ileus of the colon,³ idiopathic intestinal pseudo-obstruction,⁴⁻⁶ Ogilvie's syndrome,⁷ and pseudo-obstruction of the colon.⁸ As the variety of synonyms suggests, this entity presents a confusing picture.

John B. Murphy first described spastic ileus in 1896,⁹ although it was speculated by others prior to Murphy that such an entity existed. There were a few isolated cases reported after Murphy, but the first extensive review was written by Leo Zimmerman in 1930 when he presented 159 cases reported in the literature to that time. In his paper Zimmerman refers to Freeman's description in 1918:¹⁰

Spastic ileus is due to a spasmodic muscular contraction of a portion of the intestinal tract. It may affect either the small or large bowel, or both; in one place usually, or in many places. It generally includes a few inches of the gut only, although at times considerable length is compromised. A common location is the lower portion of the ileum. The typical appearance is striking and unmistakable. A section of gut a few inches in length is contracted to

* General Surgery Resident, Wesley Medical Center, Wichita.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. Bosiljevac, Wesley Medical Center, 550 No. Hillside, Wichita, KS 67214.



Figure 1. Abdominal film compatible with adynamic ileus (Case 1).



Figure 2. Barium enema on same patient revealing no organic lesion. Cecal diameter is normal.

the limit, rendering it white, bloodless and so firm that it often may be picked up by one end and held horizontally without bending. The contracted part does not merge gradually into the adjacent bowel, but stops abruptly at either end, the rest of the intestine remaining normal; but, if the trouble lasts long enough the proximal bowel dilates, as in any other form of obstruction. The spasm frequently persists after the abdomen is opened, although it may disappear and it is sometimes found even at autopsy.

Zimmerman concludes his paper by pointing out the confusing clinical picture and the difficulty in making a preoperative diagnosis in cases of spastic ileus. The cases he collected were confirmed at laparotomy or at autopsy. Branlitt and Smith's review in 1958 of mechanical bowel obstruction in Shackleford's textbook on surgical diagnosis¹ lists some cases of spastic ileus as causes of *organic* bowel obstruction. The difficult clinical diagnosis of spastic ileus is indicated by the many synonyms found in the literature. Although Freeman states that spastic ileus may occur in either the large or small bowel, other syndromes have been described more recently in the literature, particularly those dealing

with ileus of the colon or pseudo-obstruction. These would appear to be cases of spastic ileus occurring in the colon, although they are not usually described as such and are given a separate name or synonym.^{3, 7, 8, 11, 12}

Zimmerman felt that spastic ileus was due to an imbalance of sympathetic and parasympathetic stimulation to the bowel. Similar explanations of gastrointestinal motility have been reviewed by Neely and Catchpole.¹³ The causes of colonic ileus explained by a parasympathetic-sympathetic nerve imbalance are also presented by Ogilvie,⁷ Spira and Wolff,⁸ and Stephens.⁵

Based on this autonomic imbalance, Zimmerman divided the causes of spastic ileus into three basic groups:

1. Spastic ileus resulting from stimuli acting on the bowel at the site of the spasm, described as an intrinsic reflex found in the bowel wall itself; for example, secondary to a foreign body, intestinal worms, undigested food, bleeding, intra-intestinal ulceration, hernia, or circulatory disturbances; this acts on the myenteric plexus;

2. Reflex spastic ileus due to distant lesions. Stimuli from the celiac plexus or the inferior mesenteric plexus would be involved in this extrinsic reflex. French surgeons in the past treated ileus with spinal anesthesia and ganglion block, manipulating the sympathetic-parasympathetic nerve supply to the bowel. They felt that by blocking the plexus they prevented sympathetic stimuli from reaching the bowel. Examples given by Zimmerman in his paper include lesions of the celiac plexus, contusions to the abdominal wall, postoperative spastic ileus, and lesions of other intra-abdominal organs. He felt some cases of the "vicious cycle of ileus following gastrojejunal anastomosis" could also be explained by this extrinsic reflex; and

3. Stimuli to the gut from the central nervous system. Specific examples include patients with organic brain lesions and psychic disturbances.

Reviewing the clinical presentation of spastic ileus, Zimmerman describes the picture of abdominal distension and cramping abdominal pain, much the picture of mechanical bowel obstruction. He relates that the diagnosis is most frequently made at laparotomy and gave a mortality of 31.6 per cent in his review. Manipulation at the time of laparotomy may relax the spasm, thereby making the diagnosis of spastic ileus difficult. Local enterostomy was tried initially in treating the syndrome, but was then abandoned. It was felt that if the obstruction was due to spastic ileus there was certainly no assurance post-operatively that it would not occur elsewhere other than the site of enterostomy.

After Zimmerman's work was published, there was a void in the literature except for a few isolated case presentations. The entity of spastic ileus was then revived in 1948 when Sir Haenage Ogilvie presented two cases of distal large bowel obstruction.⁷ Termed Ogilvie's Syndrome, these obstructions were suggestive of cancer, but at laparotomy no colon tumor was found. Instead extensive and entirely unsuspected malignancies involving the crux of the diaphragm and celiac axis and semi-lunar ganglia were found. One patient had adrenal carcinoma and the other had pancreatic carcinoma. In his paper Ogilvie suggests that the cause of the colonic spasm or ileus was: (1) a tumor stimulating the parasympathetic supply to the colon; (2) tumor cells producing some substance simulating peristalsis; or (3) the diaphragmatic growth had interrupted the sympathetic supply to the colon, leaving the parasympathetic supply from the sacral plexus unopposed. Of these three possibilities Ogilvie postulates that the third alone is probable. He felt that infiltration of motor nerve bundles due to mechanical

stimuli should not produce overaction, and at that time secretion of a parasympathomimetic substance was unknown. Ogilvie referred back to experiments demonstrating that spinal anesthesia leads to a temporary paralysis of sympathetic stimulation resulting in contraction of the deprived portion of the intestine. Other experimenters had shown that injection of prostigmine or acetylcholine acts on the neuromuscular junction of the parasympathetics leading to contraction — often excessive or painful — of the muscular coats of the small and large intestine. There were, however, discrepancies to Ogilvie's postulation. Bentley¹⁴ in 1940 and Ray¹⁵ in 1947, in their work on splanchnicectomy, showed that bilateral sympathectomy abolishes the appreciation of pain (whereas Ogilvie's patients had pain), and that splanchnicectomy never was followed by muscular overactivity of the bowel. The explanation given by Ogilvie was that: (1) the interruption of nerve fibers by malignant infiltration may be selective, picking out motor before sensory fibers; (2) sensory and motor fibers may not run together; and (3) painful sensation blocked by normal pathways may find others — for example, the recurrence of pain after cordotomy.

Around 1949 Dunlop¹⁶ and Handley¹¹ also reported autopsy findings in cases of large bowel obstruction. No organic obstruction was found, but the patients did have malignant infiltration of the retroperitoneal tissue in the subdiaphragmatic area. Then, McFarlane¹⁷ in 1949 reported three cases of large bowel obstruction with negative findings on exploration. He believed these patients fit the definition of spastic ileus and reviewed the first description by Murphy in 1896, Freeman's paper in 1918, and also referred to a publication by Wangansteen in 1937¹⁸ to support his thoughts. Reviewing Zimmerman's three causes for spastic ileus, McFarlane added a fourth — idiopathic. At the end of his paper McFarlane concludes that the reports of Ogilvie, Dunlop and Handley, as well as his own patients, fit the description of spastic ileus. He stated that Ogilvie's Syndrome was not a new syndrome, but in essence was spastic ileus of the colon fitting into Zimmerman's description of reflex spastic ileus due to distal lesions.

Another void in the literature again occurred until about 1960 when Morton, Schwartz and Graniah¹⁹ presented eight patients with ileus of the colon. They cited Ogilvie's paper as a reference. In their eight patients one had diffuse bile peritonitis requiring a cecostomy; four had infections outside the peritoneal cavity (three with sepsis with an unknown primary and one with pneumonia); and in three obstruction

followed uterine surgery. They reviewed the clinical findings in colonic ileus and emphasized that barium enema should be obtained in these patients. Barium enema suggested the diagnosis in their cases so that nonoperative management was tried initially. However, they did point out that perforation of the cecum could occur despite failure to demonstrate an organic lesion. They found little similarity to Zimmerman's cases, but did refer to a paper by Robertson and his colleagues²⁰ who reported a case in which colonic ileus occurred after a cesarean section and led to cecal perforation.

Wanebo¹² also referred to Ogilvie in his paper on pseudo-obstruction of the colon in 1971. He presented several patients who had colonic ileus with gas cut-off at different levels in the colon on x-ray. Wanebo pointed out that pseudo-obstruction of the colon should be suspected in the patient presenting with large bowel obstruction when a major system derangement other than the gastrointestinal tract is also present. When the absence of an air fluid level on the x-ray is detected, he emphasizes the importance of the barium enema in the diagnosis and cautions the reader regarding possible perforation of the distended cecum.

Shortly after Wanebo, there were papers published referring to indications for cecostomy in pseudo-obstruction of the colon, as well as the possibility of perforation associated with an adynamic ileus of the colon.^{3, 21} Wotjalik²¹ explains the role of Laplace's Law ($\text{tension} = \text{pressure} \times \text{diameter} \times \pi$) in perforation of the cecum. The nutrient vessels of the cecum enter at 2 and 10 o'clock. The weakest point is the area of poorest blood supply, and perforation usually occurs on the anti-mesenteric aspect of the anterior colonic wall. A cecal diameter of 10-12 cm and right lower quadrant tenderness or failure of the patient to improve clinically with no decrease in cecal size after 72 hours were emphasized as important predictors of cecal perforation. Wotjalik²¹ and Adams³ both refer to colonic ileus or adynamic ileus of the colon as being secondary to interference with the sympathetic nerve supply, and cite Ogilvie, McFarlane, Dunlop, and Morton and Schwartz in the past literature.

Next, Spira and Wolff⁸ in 1976 described colonic pseudo-obstruction following the termination of pregnancy or uterine operations. This is a very good review paper demonstrating colonic pseudo-obstruction early in the postpartum and postoperative period. They presented three cases, one occurring after cesarean section, one after normal pregnancy, and one after routine hysterectomy. In their paper, Spira and Wolff refer to the first description of

spastic ileus by Murphy in 1896, and the fact that colonic pseudo-obstruction was not related to pregnancy until Von Mikulicz²² in 1926 reported 24 cases, 18 occurring after normal pregnancy. Spira and Wolff then reviewed the literature, collecting 204 cases of colonic pseudo-obstruction. Interestingly, cases collected by Zimmerman in 1930 were not included. Apparently these cases did not fit their description of colonic pseudo-obstruction. However, Ogilvie's, McFarlane's and Murphy's patients were included in that review. One case of obstruction following lead poisoning described by Murphy in 1896 was the only patient in common in both Zimmerman's and Spira's review. According to Spira and Wolff, colonic pseudo-obstruction followed normal pregnancy in about 30 per cent of cases, was idiopathic in 22 per cent, followed cesarean section in 6 per cent, was found with retroperitoneal disease in 6 per cent, with congestive heart failure in 6 per cent, after septic abortion in 5 per cent, after pelvic operation in 3 per cent, with concomitant intra-abdominal infection in 3 per cent, after myocardial infarction in 3 per cent, with trauma to the pelvis and abdomen in 3 per cent, and with lead poisoning, in myenteric plexus lesions, and in spinal injury in 1 per cent each.

In their explanation for the syndrome, Spira and Wolff describe the parasympathetic or cholinergic supply to the intestine traveling through the vagus nerves and through the sacral plexus. Referring to the myriad of experiments dealing with the autonomic innervation of the intestine, they point out that stimulation of parasympathetic nerves increases the bowel activity, whereas stimulating the sympathetic supply leads to contraction of sphincters and intestinal wall inhibition. Afferent and efferent nerves to the uterus pass along pathways mingled with those of the distal colon. As a result of labor, Cesarean section, or uterine operations there is increased afferent stimuli to the pelvic plexus. This essentially blocks the efferent parasympathetic supply so that the proximal colon has a normal nerve supply, normal tone and peristalsis, and in the distal colon — with the stimulating parasympathetic supply removed and the inhibitory sympathetic supply intact — a functional obstruction develops. There was no note in their paper as to the type of labor, whether it was normal or complicated, or whether the cesarean sections were elective or emergency. Emphasizing the possibility of cecal perforation, they also promote the value of a gastrograffin enema in both diagnostic and therapeutic aspects of colonic pseudo-obstruction. Cecostomy was required in one of their patients following abdominal hysterectomy.

Ogilvie⁷ and Spira and Wolff⁸ gave different explanations for the cause of the spasm and resulting obstruction in the colon. Sullivan *et al.*⁶ recently evaluated gastrointestinal myoelectric and motor function in four patients who had idiopathic intestinal pseudo-obstruction. In these patients, disorders such as scleroderma, myxedema, amyloidosis, hypokalemia, or renal failure had been ruled out. Anticholinergic and narcotic drugs had not been used in the treatment. In these patients Sullivan found that the physiologic neural response to swallowing or intestinal distension were impaired, but intestinal smooth muscle slow wave action and spike and motor response to exogenous neural humoral stimulation were intact. This supports the hypothesis that many aspects of the myogenic activity appear to be normal, and that in intestinal pseudo-obstruction there is a primary disorder of neural function.

Summary

Spastic ileus was first described as a clinical entity over 80 years ago. Reviewing other papers at that time, early descriptions of spastic ileus can be found. Later another entity is described, referred to as Ogilvie's Syndrome,⁷ colonic ileus,³ and colonic pseudo-obstruction.⁸ The original definition of spastic ileus certainly encompasses the findings of colonic pseudo-obstruction or Ogilvie's Syndrome. However, the occurrence of spastic ileus in the colon has received several synonyms as a separate clinical entity.

Perhaps one reason for this is the specific physiologic mechanism proposed by Ogilvie⁷ and Spira⁸ for spastic ileus appearing in the colon. Zimmerman² first mentioned that there may be a parasympathetic-sympathetic imbalance in spastic ileus. Spira⁸ suggests that a parasympathetic efferent block to the distal colon occurs while Ogilvie⁷ states that sympathetic deprivation is involved. This is mindful of McFarlane¹⁷ when he added *idiopathic* to Zimmerman's list of causes of spastic ileus.

The precipitating events differ in the reports by Ogilvie and Spira (malignant infiltration of the celiac plexus versus uterine operations), but the clinical results were the same. Among the examples of spastic ileus given by Zimmerman, it was felt that spastic ileus may be the culprit in obstruction seen after gastrojejunostomy. Clinically the result is the same as in the patients in Spira's review — obstruction in the gastrointestinal tract. The only difference is the level of the obstruction. In each case laparotomy may be indicated at the suggestion of an organic basis for the obstruction. In most of the cases collected by Zimmerman, the level of the spasm is not

defined. These cases were not included by Spira in his review, probably for this reason.

It appears that spastic ileus described in the early literature is the same entity as Ogilvie's Syndrome or ileus of the colon. Spastic ileus occurring in the colon has probably received several separate synonyms because of its location in the gastrointestinal tract. Also a more specific pathway has been proposed for spastic ileus occurring in the distal colon. The recent literature does not refer to the entity as spastic ileus; however, these syndromes with other names (for example, Ogilvie's Syndrome) are surely cases of spastic ileus. Many clinical situations responding to nonoperative management — such as some cases of stomal obstruction in gastrojejunostomy or ileus occurring with pancreatitis — may very well also be cases of spastic ileus.

References

1. Shackelford, R.: *Diagnosis of Surgical Disease*. Philadelphia, W. B. Saunders, pp. 1118-1144, 1968.
2. Zimmerman, L.: Spastic ileus. *Surg. Gynecol. Obstet.* 50:721, 1930.
3. Adams, J. J.: Adynamic ileus of the colon. *Arch. Surg.* 109:503, 1974.
4. MacDonald, J. E. *et al.*: Chronic idiopathic intestinal pseudo-obstruction. *Am. J. Med.* 49:203, 1970.
5. Stephens, F. O.: The syndrome of intestinal pseudo-obstruction. *Br. Med. J.* 2:1248, 1962.
6. Sullivan, M. A. *et al.*: Gastrointestinal myoelectric activity in idiopathic intestinal pseudo-obstruction. *N. Engl. J. Med.* 297(5):233, 1977.
7. Ogilvie, H.: Large intestine colic due to sympathetic deprivation. *Br. Med. J.* 2:671, 1948.
8. Spira, I. and Wolff, W.: Colonic pseudo-obstruction following termination of pregnancy and uterine operation. *Am. J. Obstet. Gynecol.* 126:7, 1976.
9. Murphy, J.: Ileus. *JAMA* 26:15, 1896.
10. Freeman, L.: Spastic ileus (spasmodic intestinal obstruction). *Ann. Surg.* 68:196, 1918.
11. Handley, R. S.: Chronic ileus caused by malignant invasion of posterior abdominal wall. *Br. Med. J.* 1:891, 1949.
12. Wanebo, H.; Mathewson, C. and Conolly, B.: Pseudo-obstruction of the colon. *Surg. Gynecol. Obstet.* 133:44, 1971.
13. Neely, J. and Catchpole, B.: Ileus: The restoration of alimentary-tract motility of pharmacologic means. *Br. J. Surg.* 58:21, 1971.
14. Bentley, F. H. and Smithwick, R. H.: Visceral pain produced by balloon distention of the jejunum. *Lancet* 2:389, 1940.
15. Ray, B. S. and Neill, Charles L.: Abdominal visceral sensation in man. *Ann. Surg.* 126:709, 1947.
16. Dunlop, J. A.: Ogilvie's syndrome of false colonic obstruction: A case with postmortem findings. *Br. Med. J.* 1:890, 1949.
17. McFarlane, J. A. and Kay, S. K.: Ogilvie's syndrome of false colonic obstruction. *Br. Med. J.* 2:1267, 1949.
18. Wangansteen, O. H.: Rationalizing treatment in acute intestinal obstructions. *Surg. Gynecol. Obstet.* 64:273, 1937.
19. Morton, J. H.; Schwartz, S. I. and Graniah, R.: Ileus of the colon. *Arch. Surg.* 81:425, 1960.

(Continued on page 287)

Valvular Heart Surgery

Current State of Surgical Treatment

DONALD A. BARNHORST, M.D., *Kansas City, Kansas*

VALVULAR HEART SURGERY has developed remarkably in the past 20 years from a high risk, often experimental procedure to a well-controlled, routine operation. The purpose of this report is to define the present status of aortic and mitral valve replacement in terms of the indications for surgery and the results to be expected.

Indications for Surgery

Progressive symptoms largely determine the need for surgery in patients with aortic or mitral stenosis. Ross and Braunwald¹ illustrated the poor prognosis for patients with aortic stenosis once severe symptoms had developed (*Figure 1*). Similarly, Olesen's² natural history data for patients with medically managed mitral stenosis demonstrated very poor survival (*Figure 2*). Patients with chronic valvular insufficiency often develop symptoms in insidious fashion so that left ventricular dysfunction may be severe before significant symptomatic disability has oc-

From the Section of Cardiothoracic Surgery, University of Kansas School of Medicine, Kansas City, Kansas.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. Barnhorst, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

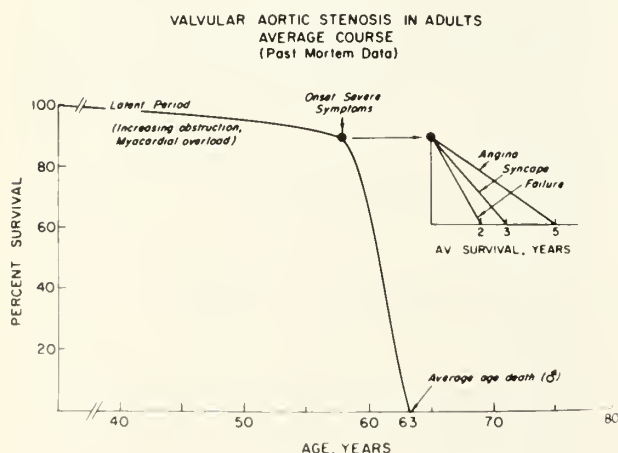


Figure 1. Natural history of valvular aortic stenosis in adults.

During recent years, valvular heart surgery has evolved from a high risk, often experimental procedure to a well-controlled, routine operation. Current indications, techniques, and results are reviewed.

curred. A number of investigators³⁻⁵ have identified poor late operative results in these patients if operation is unduly delayed. As operative results have improved, therefore, progressive increase in left ventricular size — even in the presence of minimal symptoms — should warrant consideration of operative intervention.

Surgical Technique

Surgical treatment of the aortic or mitral valve requires open cardiac technique except in certain cases of mitral stenosis. If a patient presents with pure mitral stenosis and no insufficiency, no calcium detectable in the valve on fluoroscopy, a pliable valve as determined by auscultation and echocardiography, and no history of systemic thromboemboli, closed mitral commissurotomy remains a useful technique. This procedure utilizes a dilator

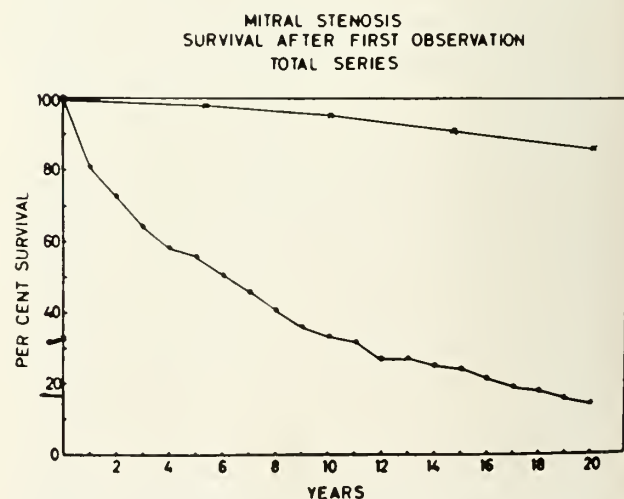


Figure 2. Natural history of acquired mitral stenosis.

TABLE I
CLASSIFICATION OF PROSTHETIC HEART VALVES

- | |
|-------------------------|
| I. Mechanical Valves |
| A. Ball and cage valves |
| 1. bare strut valves |
| 2. cloth-covered valves |
| B. Disc valves |
| 1. tilting disc |
| 2. free-floating disc |
| II. Tissue Valves |
| A. Xenograft valves |
| B. Homograft valves |

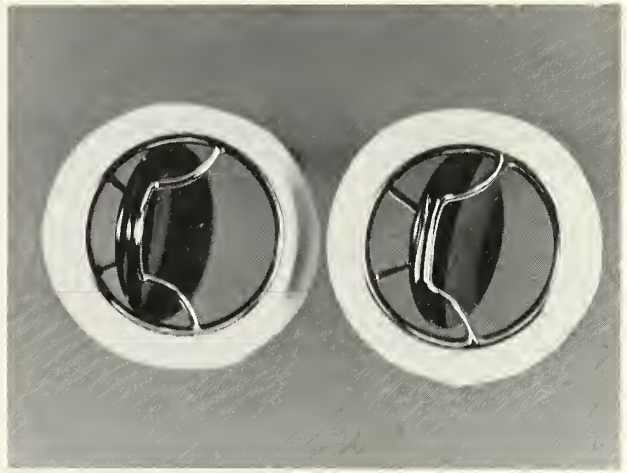


Figure 4. Bjork-Shiley tilting disc aortic valvular prosthesis, current model (right), concavoconvex model (left).

passed through the left ventricular apex to split the fused mitral valve commissures. The operative mortality is less than 1 per cent and the period of good functional result should average 10 years.⁶

Open cardiac surgery has yielded progressively better results as improved methods of myocardial protection have evolved. Currently, the most popular system is a combination of hypothermia and potassium cardioplegia. Moderate systemic hypothermia is induced with cardiopulmonary bypass; cardioplegia and profound myocardial hypothermia are effected by infusion into the aortic root or coronary ostia of a solution containing potassium chloride in a concentration of 30 milliequivalents/liter cooled to 4 C. Considerable data are now available documenting remarkable preservation of ventricular function after periods of myocardial ischemia for up to two hours.^{7, 8}

When dealing with the mitral valve, repair of either stenotic or insufficient valves is sometimes

possible. Under direct vision during open cardiac surgery, stenotic mitral valves can be opened appropriately and fused chordae tendineae and papillary muscles incised. Ruptured chordae tendineae and prolapsed mitral leaflets are causes of mitral insufficiency in which the mitral leaflet tissue is relatively normal. In such cases plication of leaflet tissue and various techniques of annuloplasty can restore competence to the valve.

In cases of advanced distortion of mitral valves and in essentially all cases of aortic valve disease, replacement of the valve is required. Prosthetic valve devices can be classified as indicated in Table I. Figures 3-5 illustrate representative examples of

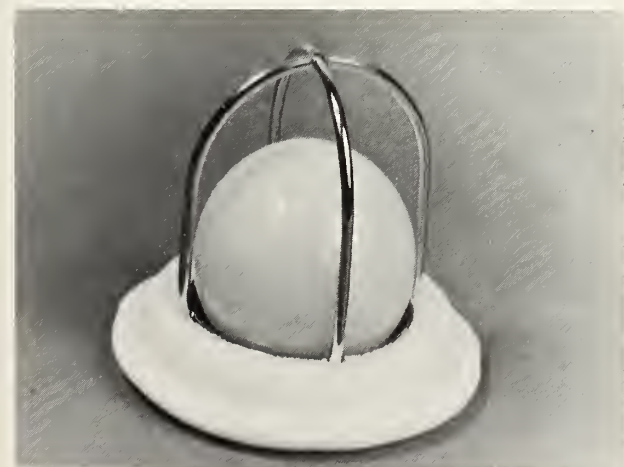


Figure 3. Starr-Edwards Model 6120 mitral valvular prosthesis.



Figure 5. Hancock porcine xenograft mitral valvular prosthesis.

TABLE II
VALVULAR HEART SURGERY
OPERATIVE MORTALITY

	No. Patients	No. Deaths	Per Cent Mortality
Aortic valve replacement	207	7	3.4
Mitral valve replacement	124	4	3.2
Double valve replacement	76	2	2.6
Open mitral valvuloplasty	43	0	—
Totals	450	13	2.9

prosthetic valves. The decision between mechanical prosthesis and tissue valve is basically between durability and slightly greater risk of thromboembolism versus eventual valve deterioration but lower risk of thromboembolism. The mechanical prosthesis with greater potential for thromboembolic complications requires that patients remain on lifetime systemic anticoagulation. Patients who have experienced episodes of systemic thromboembolism, who have large left atria, or who have thrombus found in the left atrium at time of surgery should be placed on lifetime anticoagulation even if a tissue valve is used in the mitral position. The surgeon must balance a number of factors, therefore, in deciding which prosthetic device is the best for the individual patient in a particular situation.

Surgical Results

The results of valve replacement must be viewed in terms of operative mortality, late results in contrast to the natural history of the disease, and the frequency of occurrence of complications — which in this case is principally thromboembolism.

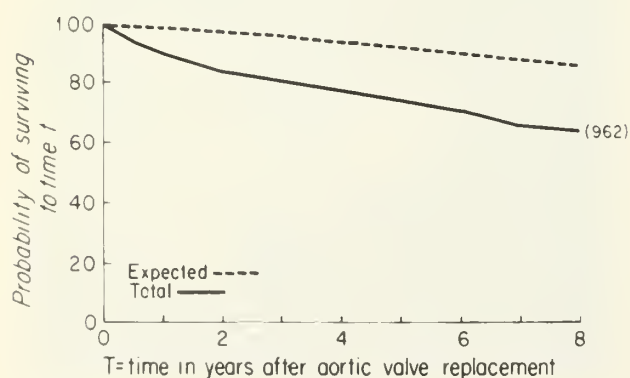


Figure 6. Late survival following aortic valve replacement with the Starr-Edwards prosthesis.⁹

TABLE III
VALVULAR HEART SURGERY
CAUSES OF OPERATIVE MORTALITY
N=13

	No. Patients
Myocardial infarction	4
Cerebrovascular accident	3
Sudden, unexplained	2
Pulmonary embolus	1
Hemorrhage	1
Mesenteric infarction	1
Low cardiac output	1

Table II lists the operative mortality in a consecutive series of the author's patients undergoing operation for correction of acquired disease of the aortic or mitral valves over the past seven years. Included in the groups are patients undergoing associated procedures, such as coronary artery bypass grafting or ventricular resection. Causes of death are listed in Table III.

Two of the fatal episodes of myocardial infarction were complications of coronary artery perfusion in the earlier years when that technique was the preferred method of myocardial preservation during aortic valve replacement. One cerebrovascular accident occurred in a woman noted to have left atrial thrombus draped across the mitral valve when the left atrium was opened at the time of mitral valve replacement. The second episode occurred in an 80-year-old woman with an audible but asymptomatic left carotid bruit prior to aortic valve replacement. She developed profound right hemiplegia five

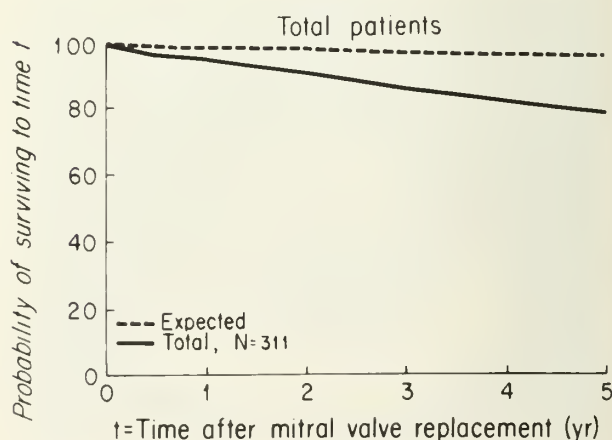


Figure 7. Late survival following mitral valve replacement with the Starr-Edwards prosthesis.¹⁰

days after surgery and eventually died. The third cerebrovascular death resulted from a cerebral embolism of uncertain source four days after operation.

Postmortem examination in one of the cases of sudden death identified hemorrhage in the region of the atrioventricular node. This patient was found dead in the shower room on the eighth day following surgery, and sudden heart block may have been the cause. Of note is the fact that only one death was the result of low cardiac output, an observation supporting the adequacy of myocardial preservation in these operations.

The late results following aortic or mitral valve replacement with the Starr-Edwards ball valve are indicated in *Figures 6 and 7*. The slope of the survival curve for patients following aortic valve replacement nearly parallels that of the normal population following the second postoperative year. In contrast, the survival curve for patients following mitral valve replacement continues to separate from that of the normal population even to five years after operation. Factors identified as predicting a greater chance of poor survival after aortic valve replacement were presence of a large left ventricle preoperatively and aortic insufficiency as the offending valve lesion. Factors predicting poorer late survival after mitral valve replacement were preoperative large left atrial size, patient age over 50 years, and presence of a second valvular lesion not adequately treated at the time of mitral valve replacement.

The most frequent major complication after aortic or mitral valve replacement has been systemic thromboembolism. As improved valve designs have become available, the incidence of this complication has lessened. Nevertheless, at present no mechanical

prosthesis can be considered safe without the use of lifetime systemic anticoagulation in the form of prolongation of the prothrombin time to 1½-2 times control with Warfarin. *Figure 8* illustrates the relative occurrence of systemic emboli with several different prostheses in the aortic position. Patients with tissue valves were not anticoagulated; those patients with mechanical prostheses were. *Figure 9* illustrates similar data for patients with mitral prostheses. Factors implicated in greater risk of thromboembolic complications have been large left atrial size, left atrial thrombus, chronic atrial fibrillation, and — in the case of mechanical prostheses — poor control of anticoagulation.

Summary

Operative treatment of valvular heart disease has progressed to the point where the risk of operation is as low or lower than that for many more commonly performed major non-cardiac operations. Late survival following surgery far exceeds the natural history of the diseases. Marked enlargement of the left atrium or left ventricle — indicators of long-standing disease — lessens the chance of a good long-term result for the patient and suggests that operation be offered earlier in the course of the disease before cardiac performance has irreversibly deteriorated. Finally, although prosthetic valves are marked improvements over the badly damaged aortic or mitral valve, they are not yet perfect. The native mitral valve should, therefore, be preserved when it can be made to function well. Careful consideration of patient age, reoperative risk, and tolerance to anticoagulants must be made in choosing mechanical versus tissue prosthesis for each individual patient.

(Continued on page 312)

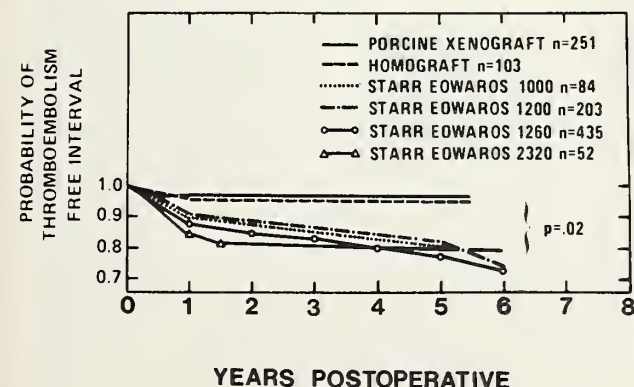


Figure 8. Incidence of thromboembolism after aortic valve replacement with tissue valves and Starr-Edwards prosthesis.¹¹

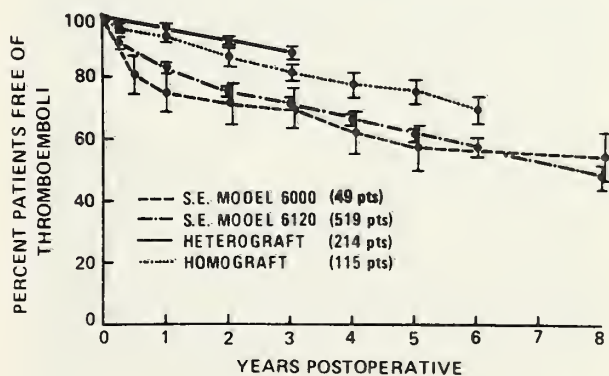


Figure 9. Incidence of thromboembolism after mitral valve replacement with tissue valves and Starr-Edwards prostheses.¹²

Light Microscopy

Histologic Analysis of Normal and Diseased Osteons

ANTHONY E. FRANCIS, M.D.;* J. J. LIN, M.D.;† and
H. O. MARSH, M.D.,‡ Wichita

INITIAL RESEARCH in this study involved the separation of single, intact osteons from normal and diseased bone. Decalcified osteons have been separated under the microscope by others.¹⁻³ Their technique involved the leaching of the mineral phase with ethylenediaminetetra-acetic acid (EDTA). The decalcified osteons were separated under a dissection microscope with tweezers and dissection knife. Ascenzi and Bonucci have built devices to separate calcified osteons.⁴⁻⁷

We have devised a method to isolate calcified osteons that does not involve extensive mechanical apparatus. This technique can produce a large number of osteons in a relatively short time. The availability of calcified osteons has allowed us to branch our efforts to study bone via light and electron microscopy, and to observe other physical characteristics of bone. This paper will concentrate on our efforts in the field of light microscopy.

The Osteon

The osteon may be defined as the functional unit of bone. In this sense, it is analagous to the alveolar-capillary unit of the lung or the nephron of the kidney. Therefore, it may be said that the osteon is the basic building block of the bone on the tissue level. The osteon is a highly organized system with many components, including Haversian and Volkmann's canals, collagen, hydroxyapatite crystals, and pro-

tein polysaccharides and cellular elements. *Figure 1* illustrates a schematic drawing of the osteon.

The Haversian and Volkmann's canals serve as the vascular supply for cortical bone. The Haversian canal is in many ways the keystone of the osteon. As the principle source of vascular supply, it is the initial structure present in the forming osteon. Later, in the separation process, it serves to identify the osteon. Volkmann's canals are perforator vessels that connect periosteal vessels with the Haversian system.

The cellular elements of bone still escape complete categorization, despite centuries of investigation. It appears that the classification of certain cell

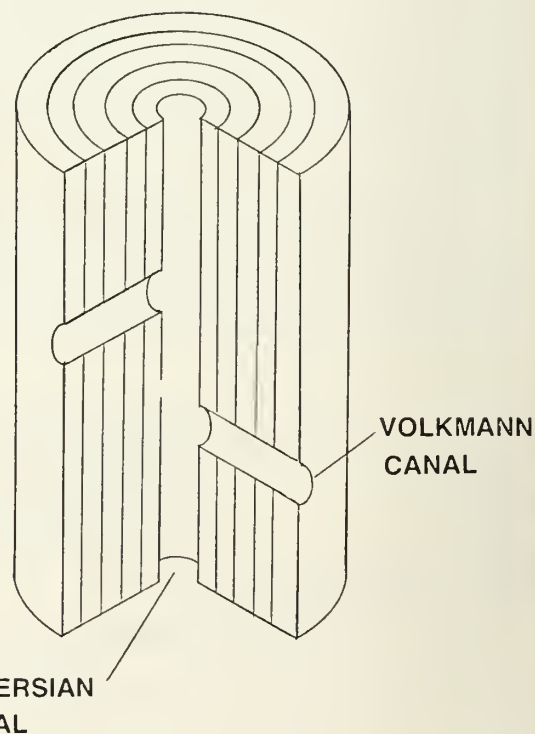


Figure 1. The osteon: This schematic drawing demonstrates the arrangement of the osteon as viewed in cut section. The concentric lamellar layers consist of collagen and hydroxyapatite, bound by protein polysaccharides.

* Resident, Department of Orthopedic Surgery, St. Francis Hospital, Wichita.

† Clinical Associate Professor, UKSM-Wichita; Department of Pathology, St. Francis Hospital, Wichita.

‡ Director, Department of Orthopedic Surgery, St. Francis Hospital, Wichita; Clinical Associate Professor, UKSM-Wichita.

This paper was awarded first place in the resident's competition at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978. The study is the result of the combined efforts of the Departments of Orthopedic Surgery and Pathology at St. Francis Hospital, Wichita.

Address reprint requests to Dr. Francis, Department of Orthopedic Surgery, St. Francis Hospital, Wichita, KS 67214.

Recently, a technique to isolate undecalcified osteons has been developed at St. Francis Hospital, Wichita. This study, under the aegis of the Department of Orthopedic Surgery and Pathology, is investigating diagnostic and structural significance of the osteon. The osteon is the functional unit of bone. This technique is reviewed. Qualitative differences in osteons from normal and diseased bone are presented.

types, such as osteoblast, osteoclast and osteocyte, is legitimate enough. However, to distinguish these on morphologic grounds alone is apparently not always obvious, nor an easy task. Also present are certain cellular elements which are of an elusive functional significance.⁸

The osteoblast has certain histologic characteristics that distinguish it from other cells. These include an abundance of rough endoplasmic reticulum and prominent Golgi bodies. Both of these morphologic characters are related to the function of the cell which is protein synthesis. The cytoplasm of these cells generally stains blue with such standard stains as Hematoxylin and Eosin. The osteoblast may be described as a cell with a single function; this function is secretion. During its early life, the osteoblast secretes procollagen, protein, polysaccharides, and minerals. These are the building blocks of the future osteon. After the osteoblast has served its purpose as

a secretor, it retires to the cloistered existence within the osteon to become an osteocyte.

The differentiation by histologic techniques of young osteocytes from osteoblasts is not easy (and in fact may be impossible in certain instances). The osteocyte rarely divides. Also, the new osteocyte is not completely entrapped in its lacunae, but remains in close contact with its neighbors through the appearance of numerous tentacle-like processes. These processes normally maintain their integrity throughout the life of the cell by existing inside channels known as canaliculi. Slowly, the endoplasmic reticulum and the Golgi bodies recede within the cell.

Collagen may be described as either new or old, based on its morphologic characteristics. Collagen is unique among proteins in that it assumes a more or less linear configuration (as opposed to the globular structure of most biologic proteins). New collagen consists of three linear strands of amino acids. These are designated as alpha-1 and alpha-2. The alpha chains are nearly identical (with slight variation) chains of amino acids. In new collagen there are two alpha-1 chains and one alpha-2 chain. This combination is tropocollagen, which may also be designated as gamma-112.

Old collagen is composed of a beta-11 chain (which is two alpha-1 chains), a beta-12 chain (which is an alpha-1 and an alpha-2 chain), plus tropocollagen (which is new collagen or the gamma-112 chain).

Collagen has several characteristics including: axial periodicity of 640-700 angstroms, high glycine content, high imino acid content, high alanine content, low aromatic acid content, and no cysteine.



Figure 2. Photograph of normal osteon viewed under polarized light. The field is approximately 3.3 mm in diameter.



Figure 3. Osteoporotic osteon viewed in a field of polarized light. Field is approximately 3.3 mm in diameter.










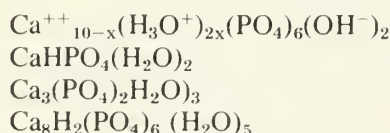
0	$1/4 \pi$	$1/2 \pi$	$3/4 \pi$	π	$5/4 \pi$	$3/2 \pi$	$7/4 \pi$	2π
								

Figure 4. Schematic diagram of half-wave plates. Only the assigned wavelengths of light ($1/2 \pi$) are transmitted. All others are absorbed and transmitted as other forms of energy.

Hydroxyapatite has been assigned numerous formulae. Some of these are listed here:



Probably all of these and many more exist in normal bone. The combining of collagen and hydroxyapatite (two dissimilar substances) give bone great structural integrity with some elastic properties.

Osteons may be defined according to their behavior in polarized light as light, intermediate, or dark. If osteons are sliced transversely so that they are viewed on end and placed in a field of polarized light, in certain orientations, all the osteons will transmit the light. If the specimen is rotated through 45 degrees, some of the osteons will not transmit the polarized light. Some of the osteons will continue to transmit light throughout an entire 360-degree rotation. These are the light osteons. Those that transmit only intermittently throughout the rotation are the dark osteons. Those with an intermediate performance in this maneuver are called intermediate osteons. Frasca *et al.*⁹ have shown this behavior to be related to the orientation of the collagen molecules within the lamellar structure of the osteon. Several theories had previously been advanced for this interesting phenomenon by von Ebner,¹⁰ Weidenreich,¹¹ Gebhardt,¹² and more recently by Smith.¹³ Leading up to Frasca *et al.* was the work of Ascenzi and Bonucci.¹⁴

Osteons may align parallel to each other or may interdigitate. This behavior seems to be related to local stresses applied to the bone in the living state. This is demonstrated nicely by Cohen and Harris.¹⁵

When normal osteons are viewed under polarized light, a massive array of colors may be seen. This is due to the refraction of the polarized light passing through the many layers of healthy collagen and hydroxyapatite. This may be interpreted as a selectivity of light wavelength transmission. When iso-

lated osteons from patients with senile osteoporosis are viewed under polarized light microscopy, there is a relative lack of color transmission. This is because all wavelengths of light are transmitted. Since osteoporosis is a disease of decreased collagen and hydroxyapatite, it may be assumed that the lack of so many layers in the osteoporotic osteon allows the transmission of more of the wavelengths of light without interruption.

Theoretical Consideration of Light

The speed of light may be represented by the mathematical relationship $c = f\lambda$ where c is the speed of light, f is the frequency, and λ is the wavelength. When the filament of an incandescent lamp is heated to approximately 3000 C, light waves of many wavelengths are given off. Those in the range of 400-700 nanometers are perceived by the eye as white light. On the molecular level, energy is absorbed by an electron in the filament of the bulb. This electron is then said to be raised to a higher energy level. The electron does not stay in this elevated energy level indefinitely, but eventually falls to a lower level of energy. In the process light (a photon) of a certain wavelength is emitted. Photons have a specific frequency, wavelength, electric vector, and magnetic vector. A beam of white non-polarized light has a mixture of magnetic and electric vectors, pointing in all directions. However, when light becomes polarized, all of the electric and magnetic vectors are arranged in a parallel fashion. This is accomplished in our work with the light microscope using special polarizing filters.

In the study of polarized light, certain substances are noted to transmit only individual wavelengths of light. This is perceived as an individual color. Substances with the ability to transmit a single color in a polarized light field are called half-wave plates. The name half-wave plate comes from the mathematical model that is used to describe this phenomenon. Light transmitted is assigned a multiple of $1/2 \pi$. All other wavelengths are assigned other numbers. In this system, only multiples of $1/2 \pi$ are transmitted. All others are absorbed and transmitted as other forms of energy. Normal osteons seen in a projected field of polarized light give a massive color display. These are individual wavelengths of light. Normal osteons can be said to have the property of performing as if they are a series of small half-wave plates in a field of polarized light.

The osteoporotic osteon transmits only white and polarized light in the field of projected polarized light. Therefore, osteoporotic osteons do not behave as if they were half-wave plates.

Individual bundles of collagen and hydroxyapatite preened from normal osteons transmit white and polarized light in the field of polarized light. Tissue on this level behaves just like osteoporotic tissue. It may be concluded that a change occurs between the level of individual collagen and hydroxyapatite bundles and the level of the normal osteon.

Normal osteons that have been fractured in the process of separation may be seen to have areas that appear osteoporotic in nature (based on behavior in polarized light). These areas are ones containing only a few layers of collagen and hydroxyapatite.

In our laboratory, we have been able to make normal osteons assume the appearance of osteoporotic osteons under visualization in polarized light. This is done by leaching the mineral and organic phase with nitric acid and EDTA.

Conclusion

It appears that there are certain differences between normal and osteoporotic osteons. The first of these differences may be found in the fracture qualities of the osteons. The osteoporotic osteons fracture much more readily. Also, the osteoporotic osteons appear to be less dense. The collagen in normal osteons is highly organized and has a rigid structure. The collagen in the osteoporotic osteon seems to lack this high degree of organization.

The normal osteon behaves as if it were a series of half-wave plates when placed in a field of polarized light. The osteoporotic osteon does not behave in this manner, but transmits all wavelengths of light and polarized light.

Certain quantitative differences have been observed between normal and osteoporotic osteons. There is no difference in the length, but there is a decrease in the transverse size of the osteoporotic osteons. This seems to be related to a decrease in the number of collagen and hydroxyapatite layers along with a generalized disorganization of the remaining structure in the osteoporotic osteons.

Our immediate goal is to map the individual areas of normal osteons in an effort to describe mathematically the observed phenomenon of color transmission. Using microdissection techniques, the relationship between color transmission in the normal osteon and osteoporotic osteon will be unlocked.

References

1. Frasca, P.; Harper, R. A. and Katz, J. L.: 22nd Annual Orthopedic Research Society Meeting, New Orleans, January 28-30, 1976.
2. Frasca, P.; Harper, R. A. and Katz, J. L.: Isolation of single osteons and osteon lamellae. *Acta Anat.* 95:122-129, 1976.
3. Frasca, P. and Katz, J. L.: Structure and strain dependence of torsion modulus of single osteons and osteon groups. Presented at the 1973 Biomechanics Symposium at the Georgia Institute of Technology, Atlanta, GA, June 20-22, 1973.
4. Ascenzi, A. and Bonucci, E.: *Acta Anat.* 58:160, 1964.
5. Ascenzi, A. and Bonucci, E.: *Anat. Rec.* 161:377, 1968.
6. Ascenzi, A. and Bonucci, E.: *Anat. Rec.* 158:375, 1967.
7. Ascenzi, A. and Bonucci, E.: *Isr. J. Med. Sci.* 7:471, 1971a.
8. Pritchard, J. J.: *The Biochemistry and Physiology of Bone*, Chapter 2 (Bourne). New York, Academic Press, 1972.
9. Frasca, P.; Harper, R. A. and Katz, J. L.: Collagen fiber orientation in human secondary osteons. *Acta Anat.* 98:1, 1977.
10. von Ebner, V.: Sind die Fibrillen des Knochengewebes verkalkt oder nicht? *Arch. Mikrosk. Anat. EntwMech.* 29:213, 1887.
11. Weidenreich, F.: *von Möllendorff Handbuch der Mikroskopischen Anatomie des Menschen* Vol. 2 (Das Knochengewebe). Berlin, Springer, pp. 391-520, 1931.
12. Gebhardt, W.: Über funktionell wichtige Anordnungsweisen der feineren und groberen Bauelemente des Wirbeltierknochens. 2. Spezieller Teil. 1. Der Bau der Havers'schen Lamellensysteme und seine funktionelle Bedeutung. *Roux' Arch. EntwMech. Acta Anat.* 14:187, 1906.
13. Smith, J. W.: The arrangement of collagen fibers in human secondary osteons. *J. Bone Joint Surg.* 42B:588, 1960.
14. Ascenzi, A.; Bonucci, E. and Bocciarelli, D. S.: An electron microscope study of osteon calcification. *J. Ultrastruct. Res.* 12:287, 1965.
15. Cohen, J. and Harris, R.: The three dimensional anatomy of haversian systems. *J. Bone Joint Surg.* 40A:419, 1958.

CHANGE OF ADDRESS

Please notify the
Kansas Medical Society
of any changes in address

*Help keep the mailing list
up to date*

Ulcerative Colitis

Operative Experiences in the Elderly

RICK WINDLE, M.D.,* and DAVID E. STREET, M.D.,† Wichita

SURGICAL TREATMENT of ulcerative colitis in men and women over age sixty is a problem that is seldom addressed with specificity in the literature. This paper will review our experience since 1969 and make some pertinent comments related to operative intervention in the elderly.

Material

At Wesley Medical Center in Wichita, twenty-nine patients age 60 or over have been hospitalized since 1969 with a diagnosis of ulcerative colitis. Included were eighteen females and eleven males with an average age of 68 years. All were diagnosed by tissue biopsy or typical proctoscopy findings combined with the appropriate clinical and radiologic history.

In reviewing the data, there is benefit to the classification of clinical types as outlined by Bockus.¹ Sixty to 70 per cent of patients suffer from the relapsing-remitting type (mild or severe), 20-30 per cent of chronic continuous, and 2-8 per cent of the acute fulminating variety. The acute fulminating type may be seen as a variant of the relapsing-remitting, or it may present primarily and progress to relapsing-remitting. It is less often a part of the chronic continuous disease.

In this study, 21 of the medically managed were considered to have chronic disease or relapsing-remitting of mild to moderate nature as judged by symptoms, white count, extent of disease, and hospital course. One medical patient had acute fulminating disease. Of the surgical patients, three had chronic continuous disease and four had acute fulminating disease.

Results

The medically managed for the most part were people with mild to moderate disease. Azulfidine, diet, and steroids — alone or in combination — were

At Wesley Medical Center, 29 patients over the age of 60 years with a diagnosis of ulcerative colitis have been hospitalized since 1969. Twenty-one were managed medically with generally good results when mild to moderate disease was encountered. One patient died with severe disease judged inoperable. Seven cases required surgery. Analysis of the end results of surgical treatment suggests that for acutely ill patients, earlier operative intervention should be considered.

used to control the disease. One patient was judged to be such a poor operative candidate that medical treatment of continuing hemorrhage was gauged aggressive enough. His diagnoses included gangrene of the foot, chronic renal failure, diabetes, previous myocardial infarctions and hypertension. He died from hemorrhage. One patient with ulcerative colitis died following unrelated surgery. Four had polyps removed through the colonoscope. Two were admitted with malnutrition responding to the elemental diet or total parenteral nutrition (TPN).

The remaining seven patients were treated surgically. Three patients with chronic continuous disease were judged intractable (*Table I*). The surgery consisted of total procto-colectomy with ileostomy; all three did well.

Four patients were suffering from complications of ulcerative colitis, two from continuing hemorrhage, one from perforation and sepsis, and one from toxic megacolon with chronic malnutrition (*Table II*).

In the patient with toxic megacolon, colectomy with ileostomy was performed following two days of hospitalization during which fluid and electrolyte balance was restored. He sustained wound dehiscence, hypovolemic shock, toxic myocarditis with atrial fibrillation, and respiratory arrest. He recovered to be discharged in good condition.

Following five days of continuing hemorrhage, one female patient was taken to surgery, but she already had sustained acute renal failure. Total

* Surgical Resident, Wesley Medical Center, Wichita.

† Clinical Assistant Professor of Surgery, UKSM-Wichita.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Medo Mirza, Wesley Medical Center, 550 No. Hillside, Wichita, KS 67214.

TABLE I
SURGICAL CASES WITH CHRONIC ULCERATIVE COLITIS

<i>Patient Name</i>	<i>Age</i>	<i>Sex</i>	<i>Reason for Surgery</i>	<i>Length of Disease</i>	<i>Operation</i>	<i>Complication</i>	<i>Hospital Stay Prior to Surgery</i>	<i>Discharge</i>
L. C.	76	F	Chronic diarrhea	25 years	Total procto-colectomy with ileostomy	Stoma revision	1 day	Good condition
E. T.	66	F	Chronic diarrhea, numerous hospitalizations	Several years	Same	UTI	24 days	Good condition
A. F.	66	M	Chronic diarrhea, med failure	Several years	Same	None	1 day	Good condition

procto-colectomy with ileostomy and gastrostomy were the surgical procedures chosen. Her postoperative course was stormy including disseminated intravascular coagulation (DIC), sepsis, cardiac arrest, and pneumonia. She died nine months later of recurrent pneumonia after an incomplete recovery.

Two patients were operated on after 17 and 54 hospital days respectively. The first patient experienced continuing hemorrhage during 17 days prior to surgery. Total proctocolectomy with ileostomy was done, but she died from aspiration pneumonia on the third postoperative day. The second patient had fulminating disease, ileal perforation, and sepsis after 54 days of medical management; total proctocolectomy with ileostomy was done. She overcame complications of sepsis, DIC, congestive heart failure with atrial fibrillation, candida esophagitis, and a urinary tract infection and recovered.

Comment

It is worthwhile to review the indications for surgery as outlined by Ober-Helman.² Surgical intervention is required in the management of the following complications: (1) growth retardation in children; (2) intractable disease; (3) massive or recurrent severe hemorrhage; (4) toxic megacolon not responding to comprehensive medical measures, or its recurrence; (5) perforation or impending perforation of the colon; (6) stricture with partial obstruction; (7) suspected or proved carcinoma; and (8) extensive peri-rectal infection or fistula. All of the above except growth retardation pertain to the elderly.

Using the above guidelines, three of our patients with chronic ulcerative colitis qualified for surgery by the diagnosis of intractable disease not adequately controlled by medical means. Dr. F. Warren Nugent³ of the Lahey Clinic recently emphasized to us that colectomy is required in patients with diffuse

chronic disease. He states that early recognition and surgery furnishes the best results and the lowest mortality in the elderly. This is reiterated in an article by Van Heerden⁴ of the Mayo Clinic in which he advises earlier surgery in those patients with chronic ulcerative colitis before complications of the disease take their toll. Once complications developed and emergency surgery was needed, mortality rose from 1.3 per cent to 25.0 per cent for all ages.

This leads to our next group of patients — four with acute fulminating disease with complications. It is problematical when the best time for surgical intervention occurs in the acute process. Our opinion is similar to Goligher and his co-workers who have reported a mortality of 11.0 per cent when the acute episode was treated medically for 10 days before surgery compared to 1.3 per cent when surgery was advised after failure to respond conclusively in three to four days. We wish to underscore this in the elderly. Although these acutely ill people are not considered good surgical risks by primary physicians, several days of bedrest, NPO, steroids, and IVs put these patients in a catabolic process that increases the chance of sepsis. They often are malnourished and so weak that adequate postoperative pulmonary care is nearly impossible. We feel this conclusion is supported by the 50-per cent mortality among our patients and the devastating complications they each suffered. All of them contracted respiratory insufficiency and spent an extended period of time postoperatively on the respirator. It would be our choice that when patients with hemorrhage, perforation, or toxic megacolon enter the hospital, surgical consultation be obtained immediately and the patient be viewed as a surgical candidate from the start. It is important at the time the surgeon sees the patient that the principles correcting blood loss, proper fluid and electrolyte re-

TABLE II
SURGICAL CASES WITH ACUTE FULMINATING DISEASE

<i>Patient Name</i>	<i>Age</i>	<i>Sex</i>	<i>Reason for Surgery</i>	<i>Length of Disease</i>	<i>Operation</i>	<i>Complication</i>	<i>Delay</i>	<i>Discharge</i>
F. K.	72	F	Continuing hemorrhage	30 days	TP, Ileostomy, Gastrostomy, Trach., Pacemaker	Preop AFR 2° to hemorrhage, resp. arrest, cardiac arrest, DIC, pneumonia, UTI	5 days	Died 9 months after discharge Pneumonia, recovery judged incomplete
L. M.	66	M	Perforation, failure of medical management	2 months	TP with Ileo	CHF, DIC, sepsis, atrial fibrillation, candida esophagitis, UTI, duodenal ulcer	54 days	Improving, has done well
R. H.	70	M	Toxic megacolon, chronic malnutrition and diarrhea	15 days	Colectomy	Wound dehiscence, atrial fibrillation, hypovolemic shock, toxic myocarditis resp. arrest	2 days	Good condition
H. R.	67	M	Continuing hemorrhage	1½ years	TP with Ileo	Died aspiration pneumonia 3rd day postop	17 days	

pletion, possible TPN, and bowel preparation are given attention. One must also remember that prothrombin deficit needs to be corrected and the steroid coverage must be continued. With these principles in mind, chances of successful management of the disease are improved.

After a decision is made for surgical intervention, the choice of operation is the next dilemma. Briefly, for chronic continuous disease — even in the elderly — one stage procto-colectomy and ileostomy appears to be the surgical procedure of choice. The three patients with chronic continuous ulcerative colitis whom we treated in this manner all did well, reflecting also on the good anesthesia-surgical support that we received.

In the patients with acute fulminating disease, the choice of operation may be less clear. Generally speaking, total procto-colectomy with ileostomy is the first line of defense. There are some situations where ileostomy with subtotal colectomy was chosen with abdominal perineal resection at a later date. This operation is done most often with patients who are not doing well at the end of the abdominal excision of the colon and closure is chosen. Some authors, such as George Block,^{5, 6} believe the two stage colectomy should be considered when toxic

megacolon is present, recording lower mortality with this procedure. On the other hand, Sirinek,⁶ in a recent study at Ohio State University, felt that one stage procedure yielded the best result in toxic megacolon. A third choice is Turnbull's preference for colostomy with multiple colotomies. In the one elderly patient with toxic megacolon at our institution, colectomy with ileostomy was performed initially. In the patient with perforation, total procto-colectomy with ileostomy was done. The two patients with severe hemorrhage also had the one stage procedure. Most authors agree that in the face of hemorrhage one stage procto-colectomy is best.

Postoperatively, respiratory care, fluid, and electrolyte balance seem to be foremost with early attention to nutrition. TPN can be an asset to speed recovery and prevent complications. We also believe consideration should be directed toward prevention of stress-induced gastritis.

Conclusion

Ulcerative colitis was diagnosed in 29 patients over 60 years of age between 1969 and the present in our institution. Seven eventually underwent surgery. From this limited experience, supported by the ex-

(Continued on page 268)

Soft Tissue Injuries

Use of Arthrograms to Determine Ligament Injury to the Ankle

HARRY G. KROLL, M.D., and DAVID E. THURSTON, M.D., *Topeka*

SOFT TISSUE injuries about the ankle occur frequently and probably comprise one of the most common disorders seen in the emergency room of any hospital. Although classified as "ankle sprains" once an x-ray examination fails to show any element of fracture, it is the recognition of a sprain and the accompanying degree of inherent soft tissue injury that often proves to be difficult for the physician to determine in his clinical evaluation. If the degree of soft tissue injury about the ankle can be properly assessed, appropriate treatment becomes apparent and may be implemented.

Some clinicians classify ankle sprains by grade as to the severity of soft tissue damage. Grade one suggests mild or minimal sprain with no actual ligament tear; in these minor sprains there is mild swelling and tenderness, but essentially no hemorrhage and no functional impairment. A grade two injury — regarded as a moderate sprain — may have partial ligament tear, gross swelling with hemorrhage, and some functional impairment. Grade three ankle sprain represents a complete ligament disruption with swelling, hemorrhage, ankle instability, and considerable functional impairment.

In the evaluation of ankle injury, it is the determination of degree of ligament injury that prescribes the form of treatment. Structurally the ligaments about the ankle serve several functions: a proprioceptive information as to position sense; stability of the joint as to protection against excessive motion or subluxation; and as a guide to proper and limited motion. The tibio-fibular joint is supported entirely by ligaments, and as a weight bearing joint it is constantly threatened by injury, especially from inversion and eversion forces. Laterally the collateral ligaments about the ankle are comprised of the anterior talo-fibular ligament which is most frequently injured, but contributes little to ankle stability; the fibular-calcaneal ligament whose disruption contributes to ankle instability and provides "talar tilt" to an abnormal degree; and the posterior talo-fibular ligament which rarely is injured except when there is

Soft tissue injuries to the ankle are quite common. The degree of severity determines the proper treatment; arthrogram provides the most objective and reliable assay of ligament injury. Several cases are discussed relating treatment to arthrogram diagnosis.

complete dislocation of the ankle joint. On the medial portion of the ankle the deltoid ligament provides the stabilizing element to the joint, and only occasionally when the tibio-fibular ligament has been injured is there likely to be an associated injury to the deltoid ligament other than with associated fractures about the ankle, producing a diastasis of the ankle mortise.

In a study of 321 ligament injuries about the ankle, Broström found 64 per cent of the cases had injuries to the anterior talo-fibular ligament; 17 per cent of the injuries accounted for damage to the anterior talo-fibular and the fibular-calcaneal ligament combined. The anterior tibio-fibular ligament was injured in 10 per cent of cases, but the deltoid ligament was disrupted in only 6 per cent of cases. At the United States Naval Academy, Brand, Black and Cox found that those ankle sprains inadequately treated created a feeling of instability. Seventeen percent of 175 athletes complained of "trick ankles." In stress or talar tilt x-rays, those ankles with a difference between ankles of 5 degrees or more were regarded as functionally impaired, and if the difference was greater than 10 degrees symptoms increased significantly. The real nemesis of ankle injuries is the problem of determining to what extent the ligamentous structures have been impaired; *i.e.*, how much ligament disruption has occurred. Aside from the routine views of the ankle joint on x-ray, additional stress views may delineate the degree of ligament insult — whether the injury is a grade one, two, or three sprain. Stress views showing a talar tilt of 10 degrees or more may be considered significant. Occasionally acutely painful ankles may resist manipulation into stress positions for the taking of x-rays. The use of local anesthetic infiltration into

the joint may overcome this difficulty. Comparison stress views of the contralateral ankle will prove helpful when determining the degree of physiological mobility of the ankle joint. Without comparison views, proper evaluation of joint instability will sometimes be most difficult. When clinical examination and stress x-rays demonstrate ligament instability of the ankle, an arthrogram is necessary to properly determine the degree of ligament injury and will frequently delineate the specific ligaments involved. There are instances where seemingly increased ankle mobility is demonstrated by stress x-rays, but an arthrogram fails to show actual ligament disruption. Therefore, it is concluded that in these instances, the arthrogram provides a more objective and reliable assay of ligament injury.

Some clinicians question the method of administering or performing an arthrogram, *i.e.*, whether the contrast media should be injected intracapsular, or into the sheath of the peroneal tendon for the proper interpretation of ligament injury. Anatomically, the anterior fibular talor ligament is an intra-capsular structure that is most commonly injured, and is a structurally weak ligament. In contrast, the calcaneo-fibular ligament is an extra-capsular structure that is covered by the peroneal tendons. Consequently, an injury that involves the talo-fibular ligament — and more particularly the calcaneal-fibular ligament — is likely to permit extravasation of contrast dye into the extra-capsular area along the course of the peroneal tendons. Disruption of the calcaneal-fibular ligament contributes to extensive ankle instability and usually requires surgical intervention with repair of the ligaments. If all three elements of the lateral collateral ligament are disrupted, then complete ankle dislocation has developed.

Once a diagnosis has been made of ligament injury and the degree of ligament insult established, the appropriate treatment can be instituted. For mild sprain, strapping and elastic bandage immobilization is quite satisfactory; for moderate sprain with a partial ligament disruption, walking cast immobilization for three weeks is usually adequate; and for severe ankle injury with demonstrable ligament disruption, surgical repair of the ligaments and cast immobilization for approximately six weeks is necessary to provide adequate stability and proper rehabilitation.

Case Reports

Case One: A 25-year-old male fell at work and injured his ankle. X-rays with stress views showed a talar tilt, but the arthrogram was negative. Treatment consisted of casting for three weeks.

Case Two: A 15-year-old female injured her ankle playing baseball. X-rays with stress views showed a talar tilt, but the arthrogram was negative. Treatment consisted of casting for three weeks.

Case Three: A 17-year-old male injured his ankle playing basketball. X-rays showed a talar tilt, and an arthrogram revealed lateral ligament tear. He was treated surgically with a ligament repair and cast immobilization for six weeks.

Case Four: A 22-year-old female injured her ankle playing baseball. X-rays showed a talar tilt on stress views, and the arthrogram demonstrated a tear of the lateral ligaments. The ligaments were repaired surgically with cast immobilization for six weeks.

Summary

The severity of ligament injuries about the ankle can be more readily determined by means of stress views on x-rays and the supplemental use of arthrograms of the ankle joint. The utilization of arthrograms further defines the presence of ligament injury and the degree of ligament disruption that has occurred. Once the diagnosis has been made, the physician can determine the appropriate treatment for the ankle injury.

Ulcerative Colitis

(Continued from page 266)

perience of many others, we feel that this age group will tolerate total procto-colectomy with ileostomy for chronic continuous disease. For those with acute fulminating disease we feel that early surgical intervention is mandatory for continuing hemorrhage, perforation, or toxic dilatation. Delays in surgery only promote the malnutrition, fluid imbalance, and sepsis that eventually intervened effecting a difficult recovery.

References

1. Bockus and Roth: *Chronic Inflammatory Disease of the Intestines*. Textbook of Gastroenterology.
2. Oberhelman, H. A.: Inflammatory disease of the bowel: Indications for surgery. *Dis. Colon Rectum* 19(7):582-583, 1976.
3. Nugent, F. Warren: Chronic ulcerative colitis in the elderly patient. *Dis. Colon Rectum* 7(6):425, 1964.
4. Van Heerden, J. A.: The surgical aspects of chronic mucosal inflammatory bowel disease (chronic ulcerative colitis). *Ann. Surg.* 187(5):536-541, 1978.
5. Block, George E.: Operations for inflammatory bowel disease. *Surg. Clin. North Am.* 57(6):1235-1251, 1977.
6. Block, George E.: Emergency colectomy for inflammatory bowel disease. *Surgery* 82(4):531-536, 1977.
7. Sirinek, K. R.: Total procto-colectomy and ileostomy: The procedure of choice for acute toxic megacolon. *Arch. Surg.* 112(4):518-522, 1977.

Morbid Obesity

Gastric Bypass

CHARLES E. VanHOUDEN, M.D.,* and JAN deBAKKER, M.D.,† Wichita

THE MORBIDLY OBESE patient has been shown to be at high risk for the development of hypertension, congestive heart failure, coronary artery disease, diabetes mellitus, pulmonary insufficiency and other maladies, and to be predisposed to early death.¹⁻³ Because conservative therapy in these individuals has been shown to be ineffective in general,⁴ several operative procedures have been designed to treat obesity.⁵⁻⁷

The first gastric bypass was performed by Mason in 1966,⁸ and since that time he has performed more than 600.⁹ Others have reported on their experience with gastric bypass but most of these reports have come from university surgical programs. We have performed more than 100 gastric bypasses for morbid obesity at St. Francis Hospital, Wichita, a community hospital of 900 beds. In an effort to determine if gastric bypass is feasible in a community hospital this report reviews the first 52 patients, who have been followed for at least one year.

Indications

To be considered for gastric bypass a patient must conform to the following criteria:

1. One hundred pounds or more overweight based on the life insurance tables (Metropolitan Life Insurance Co.). Obesity present at least five years;
2. Failure to control obesity with a prolonged guided medical program of at least one year's duration;
3. Adequate medical work-up to show absence of any correctable endocrine problem that could cause obesity, and absence of a significant liver disease, abnormal calcium metabolism, or malabsorption state; and
4. Presence of conditions severely aggravated by obesity — for example, hypercholesterolemia,

The morbidly obese patient is at high risk for development of numerous maladies, and is predisposed to early death. Successful gastric bypass — weight loss of 100 lbs or more — leads to a decrease in morbidity and a return to the standard rate of mortality. However, the procedure is technically difficult with a significant percentage of patient morbidity and mortality, and for this reason strict adherence to established criteria in patient selection is mandatory.

hypertension, coronary artery disease, diabetes mellitus, respiratory insufficiency — would tend to favor this operation.

In addition, each patient must agree to postoperative follow-up and be aware of and accept the morbidity and possible mortality associated with the procedure.

Materials and Methods

Fifty-two patients — 2 males, 50 females — form the basis of this report. Ages ranged from 16-54 years with both the average and median age being 30 years.

The average female was 5 ft 4½ in tall (R: 4 ft 9 in-6 ft 0 in) and weighed 264 lbs (R: 194-363 lbs). The average male was 5 ft 10 in tall (R: 5 ft 8 in-6 ft 0 in) and weighed 321 lbs (R: 308-334 lbs).

Preoperative evaluation included blood chemistry studies using an automated multiple analysis system, complete blood count, urinalysis, thyroid function study, arterial blood gases, serum cortisol, chest x-ray, electrocardiogram, upper gastrointestinal series, oral cholecystogram, barium enema, and intravenous pyelogram in addition to the routine history and physical examination.

Technique

The gastric bypass procedure was performed through a long upper midline incision. The abdomen was explored and any surgical disease corrected, *i.e.* ovarian cystectomy. The left triangular ligament was

* Resident in General Surgery, St. Francis Hospital, Wichita.

† Clinical Assistant Professor, Department of Surgery, University of Kansas School of Medicine-Wichita.

From the Department of Surgery, University of Kansas School of Medicine-Wichita and St. Francis Hospital, Wichita.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. deBakker, 1035 No. Emporia, Wichita, KS 67214.

divided for exposure. The proximal half of the greater curvature of the stomach was then mobilized, as was a small area along the proximal lesser curvature. The stomach was then divided leaving a 10-per cent proximal gastric pouch. The distal stomach and proximal pouch were closed in two layers. A retrocolic loop of jejunum just distal to the ligament of Treitz was then anastomosed to the proximal pouch, the gastrojejunostomy measuring 1.5-2.0 cm. Prior to closure, a nasogastric tube at the jejunogastrotomy was irrigated with sterile saline to check for anastomotic leaks. The abdomen was closed with double stranded O-Neuroton, the subcutaneous tissues irrigated, and the skin closed with 4-0 Prolene or staples.

All patients were observed in the surgical intensive care unit for at least 48 hours. The nasogastric tube was removed and a clear liquid diet begun when bowel activity resumed. Diet was advanced as tolerated with patients being instructed to eat small portions.

After discharge from the hospital, patients were seen one to two weeks postoperatively, and then at three-month intervals for the first year.

Follow-Up

Thirty of 50 patients kept all postoperative visits and ten of 50 missed only one. The first patient of the series did not return until 18 months after her initial postoperative visits, probably because she experienced essentially no weight loss. Another patient moved out of state and has been followed with letters. One patient who had lost 88 lbs at six months has failed to return and cannot be contacted. Other patients who were seen only once (one patient) or twice (five patients) have been contacted and apparently did not return because they were doing so well. Three of these lost over 100 lbs and the others lost between 55 and 86 lbs. This leaves only one other patient lost to follow-up, who was not seen after her three-month visit at which time she had lost 22 lbs.

Results

Criteria for assessment of success of the procedure is based on weight loss: excellent — greater than 100 lbs; good — 50-100 lbs; poor — less than 50 lbs. Thirty-six per cent (18/50) of patients had excellent results with an average weight loss of 122 lbs (range 100-155 lbs). Fifty-six per cent (28/50) had good results losing an average of 78 lbs (R: 53-98 lbs). This group included two who were pregnant during the first postoperative year when these weights were recorded. Also included in this group were two patients who were lost to follow-up at six and nine

months, having weight losses of 88 and 72 lbs, respectively. Four patients had poor results. At eighteen months postoperatively the very first patient weighed only 17 lbs less than her preoperative weight. Patient number seven in the series lost 49 lbs and patient number 14 lost 43 lbs. The other patient lost to follow-up at three months had lost 22 lbs.

Morbidity and Mortality

Complications in our group of patients were divided into minor and major. There were 34 minor complications in 29 patients, and eight major complications in eight patients. Major complications were defined as those requiring further surgery or resulting in death, and all other complications were regarded as minor.

Fourteen patients developed urinary tract infections; however, six of these patients were diagnosed preoperatively. Nine patients had a postoperative pleural effusion confirmed by chest x-ray. Ten patients had postoperative wound complications — six infections, one hematoma, and three stitch granulomas. The only other minor complication was a partial small bowel obstruction which resolved spontaneously during the postoperative period.

Six patients developed ventral hernias which since have been repaired. Two patients died — one from pulmonary embolism and one from myocardial infarction.

Mason¹⁰ reports that among his patients, roughly one-third lose more than 50 kg, one-third lose between 25 and 50 kg, and one-third lose less than 25 kg. Our results compare very favorably with his. Like Mason, however, few of our patients attained their ideal body weight. In our series only two attained a weight that would be considered normal and one of these only after developing metastatic cervical cancer.

To optimize the results of gastric bypass, one should select those patients who will lose over 100 lbs, and suffer no complications. Unfortunately, it is not known who will do well and who will do poorly; however, some observations can be made.

In this study those patients who lost over 100 lbs on the average weighed over 40 lbs more than those who lost less than 100 lbs, and had an average preoperative weight of 290 lbs compared to 250 lbs for those losing less than 100 lbs. Two of the patients who lost less than 50 lbs had an average preoperative weight of only 209 lbs. The other confirmed failure had a 20 per cent proximal pouch which accounted for her failure to lose weight. It would seem, then, that degree of obesity directly affects the amount of weight lost after the gastric bypass.

No association could be demonstrated between preoperative weight and incidence of subsequent postoperative complications. Thirty-four of fifty-two (65.4%) patients developed complications. For those patients weighing more than 275 lbs, 15 of 23 (65.2%) had complications, while in those weighing less than 275 lbs, 19 of 29 (65.5%) had complications. In those patients weighing more than 300 lbs, six of nine (66.7%) had complications. Likewise, there was no association between weight and specific complication.

There seemed to be a trend in our data indicating that complications were more frequent in the older patients. The two patients under 20 years of age suffered no complications. In the age group 20-29 years, 15 of 22 (68.2%) patients had complications, while 13 of 21 patients (71.4%) in the 30-36 year age group had complications. Six of seven (85.8%) patients had complications in the 37-54 year age group, including two deaths (both age 40). However, the oldest patient, age 54, had an uneventful postoperative period.

Discussion

In addition to the gastric bypass, eight patients underwent another intraoperative procedure at the time of surgery. One patient had an Allison type repair of a hiatal hernia. Two patients had ovarian cysts removed. Three patients had cholecystectomies and two patients had splenectomies for lacerated splenic capsules. These additional procedures did not result in increased morbidity with the exception of one patient undergoing splenectomy who developed a pleural effusion.

Although no serious metabolic problems were encountered in this group of patients, there were some temporary, annoying side-effects. The majority of patients had postprandial vomiting for several weeks following surgery. It apparently takes that long to break the life-long habit of engorgement at meal time. Several patients complained of postprandial nausea and weakness after eating concentrated carbohydrates. However, diarrhea appears not to be a problem.

Several anecdotal instances of increased libido have been noted in this group of patients. Three of the patients have delivered normal, term infants, with two of the women conceiving in the first postoperative year.

It has been established that weight loss in the morbidly obese leads to a decrease in morbidity and a return to the standard rate of mortality.² The value of gastric bypass in reducing morbidity has been proven, but follow-up at this time is insufficient to determine the effect on mortality rates.

Obesity is primarily a medical problem with few patients fitting the criteria for surgical treatment. However, in the morbidly obese patient who has failed to lose weight with aggressive medical management, gastric bypass has been shown to be a reasonable alternative. The gastric bypass operation promotes weight loss by limiting the amount of food ingested while allowing normal digestion.

Strict adherence to established indications is mandatory, as the procedure is technically difficult with a significant percentage of patient morbidity and mortality. Because of this, patients must be well informed and agree to continuing, lengthy postoperative follow-up.

Conclusion

Gastric bypass was performed in 52 morbidly obese patients who have now been followed for at least one year postoperatively. Weight loss was excellent in 18 patients, good in 28, and poor in four. There were two deaths. Gastric bypass has been shown to be an effective treatment for the morbidly obese patient and one that can be performed with acceptable morbidity and mortality in a community hospital.

References

1. Garlan, T. and Kannel, W.: The effects of overweight on cardiovascular disease. *Geriatrics* 28:80, 1973.
2. Bray, G. A.: The obese patient. *Major Problems in Internal Medicine* Vol. IX. Philadelphia, W. B. Saunders, 1976.
3. Society of Actuaries: Build and blood pressure study. 1959.
4. Bray, G. A.: The myth of diet in the management of obesity. *Am. J. Clin. Nutr.* 23:1141-48, 1970.
5. Payne, J. H. and DeWind, L.: Surgical treatment of morbid obesity. *Arch. Surg.* 106:432-437, 1973.
6. Printen, K. J. and Mason, E. E.: Gastric surgery for relief of morbid obesity. *Arch. Surg.* 106:428-431, 1973.
7. Tretbar, L. L.: Weight reduction: Gastric plication for morbid obesity. *J. Kans. Med. Soc.* 77:488-490, 1976.
8. Mason, E. E. and Ito, C.: Gastric bypass in obesity. *Surg. Clin. North Am.* 47:6, December 1967.
9. Mason, E. E. and Ito, C.: Graded gastric bypass. *World Journal of Surgery* 2:341-349, 1978.
10. Mason, E. E. and Printen, K. J.: Optimizing results of gastric bypass. *Ann. Surg.* 182:405-414, 1975.

Total Parenteral Nutrition

Guidelines for Utilization of Intralipid and Peripheral Veins

J. E. BOSILJEVAC, M.D.,* *Wichita*

INTRAVENOUS fluids and antibiotics are among the major advances in medicine in this century. Recent advances in parenteral nutrition have played an important role in the management of difficult problems. The first to attempt parenteral nutrition was Sir Christopher Wren in 1658 when he attached a goose quill to a pig's bladder and injected wine and opium into a dog's vein. Two hundred years later Claude Bernard injected a solution of egg whites and milk into a rabbit's veins with no ill effects. Then in 1876, J. T. Whittaker presented a paper on "hypodermic alimentation" to the Cincinnati Academy of Medicine. He described treatment of a 20-year-old female near starvation because of persistent nausea and vomiting after eating, alternating hypodermic injections of one teaspoon of milk with one teaspoon of beef extract. This was carried out for several days. She was entirely NPO and recovered completely except for developing some abscesses from the milk. In 1896, Biedl and Kraus infused intravenous dextrose into man for the first time. By the 1940s many solutions of vitamins, electrolytes, amino acids, and glucose were available. In 1930 Holt attempted the use of lipid emulsions in parenteral nutrition. Lipomul — a cottonseed oil emulsion introduced in the 1950s — was used but problems developed with anemia and bleeding. Then, in the late 1960s, Dudrick and Rhoades from the University of Pennsylvania found it possible to support patients and put them in positive nitrogen balance with hypertonic glucose infused through a catheter in the superior vena cava. They called this procedure hyperalimentation. Known as the *glucose system*, this regimen forms the basis for total parenteral nutrition (TPN) today. Intralipid was developed by Swedish investigators in 1963. The development of TPN via peripheral veins using intralipid serves as a complement to the glucose system and is referred to as the *lipid system*.¹

The lipid system avoids the problems associated

Total parenteral nutrition (TPN) administered via a central venous catheter and infusing hypertonic glucose is referred to as the *glucose system*. TPN via peripheral veins and using fat as the major caloric substrate is known as the *lipid system*. These methods complement each other. However, to be protein sparing, the lipid system must be administered according to a specific regimen. A background of metabolism in fasting man and the utilization of lipids as a source of calories is presented. Guidelines for the proper administration of the lipid system are proposed, and data are presented on a variety of patients treated by the lipid system.

with a central venous catheter and the metabolism of large amounts of glucose. Since intralipid is administered through peripheral veins, there are no central venous catheter complications such as pneumothorax, infection, hydrothorax, or superior vena cava thrombosis. Since large glucose loads are not required there is no metabolic acidosis or hyperglycemic or hyperosmolar problems. This may be of particular benefit to diabetics who are unable to generate insulin response to the high glucose load. There is easy maintenance of fluid and electrolyte balance. The lipid system provides essential fatty acid deficiency protection. It may free the patient from a continuous infusion. It may be found useful in the tracheostomy or burn patient who has an area of contamination near the site of the central venous line. Cost has been shown to be very similar to the hypertonic glucose regimen. Nitrogen balance has been shown by various studies to be as effective. Although there are some possible pathophysiologic risks, these are minimal with proper administration. Generally a larger fluid volume is required with the lipid system. This may be prohibitive in some cardiac or renal patients but may actually be helpful in some situations, such as in a patient with an enterocutaneous fistula who is losing a large amount of fluid through the fistula. To understand the place of fat emulsions in TPN it is important to understand

* General Surgery Resident, Wesley Medical Center, Wichita.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. Bosiljevac, Wesley Medical Center, 550 No. Hillside, Wichita, KS 67214.

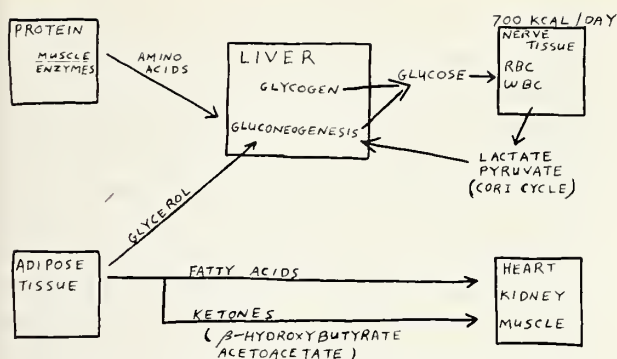


Figure 1. Fuel metabolism in the fasting state.

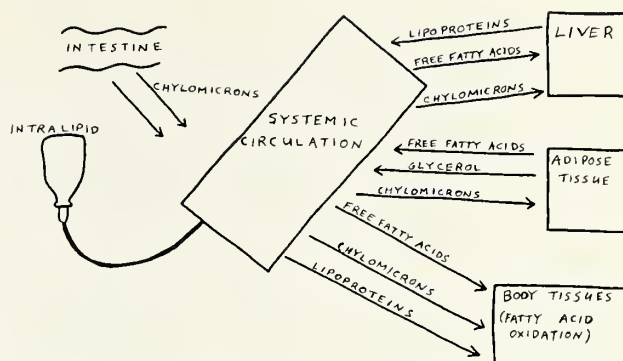


Figure 2. Transport and metabolism of triglycerides and fatty acids.

metabolism in fasting man and metabolism of fat by man.

The metabolism that occurs in starvation was demonstrated by Cahill in 1976.² Basal requirement for fasting man is about 1,800 KCal/day (Figure 1). The main sources of calories in a fasting patient are adipose tissue triglycerides and protein. Protein serves a useful non-fuel function — enzymes, body structures — and the basis for any nutritional regimen is the preservation of body protein (nitrogen sparing). However, in fasting man about 700 calories of glucose/day are required for metabolism by nerve tissue and red and white blood cells. The only source for this glucose in the fasting state is amino acids from protein breakdown. These amino acids go through a route of gluconeogenesis in the liver. Other organs — such as liver, heart, kidney, and muscle — can utilize fatty acids and ketones for calories, and in the fasting state the body gears itself to derive most of its calories from fat.

Cahill points out the importance of hormonal control in fasting man and the role that insulin plays in fasting. In the fasting state insulin levels are low. This increases lipolytic activity, stimulating lipoprotein lipase to increase fatty acid release. Low insulin levels also decrease the uptake of amino acids for protein synthesis in muscles. This releases protein which is broken down into amino acids and utilized by gluconeogenesis to provide the glucose that is metabolized daily by nervous tissue. Gamble³ first suggested the administration of small amounts of glucose to decrease the nitrogen excretion in the urine; Aoki⁴ confirmed this. They demonstrated that 100-150 gms of glucose as a 5 or 10 per cent solution spares proteolysis of about 50-75 gms of protein/day; presumably this glucose is detected by the insulin-producing mechanism and also provides glucose calories for nerve tissue and red and white blood cells. As insulin levels fall fatty acids are mobilized and gluconeogenesis from amino acids increases.

The opposite occurs as insulin levels rise in response to glucose loads. In prolonged fasting, body protein attenuates since a certain amount must be used daily for gluconeogenesis if there is no carbohydrate available. Several adaptations take place in prolonged fasting.² First, there is a glucose exclusion from major tissues. Next, the Cori cycle comes into effect shipping the products of anaerobic glycolysis from red and white blood cells back to the liver to make glucose for nerve tissue. Finally, the brain may gear itself to utilize keto acids such as acetoacetate or beta hydroxybutyrate for calories (Figure 1).

The transport mechanism for triglycerides and fatty acids can be seen in Figure 2. The intralipid particles are utilized in the same way as chylomicrons⁵ — *i.e.* they may be stored or used for calories. The size of the intralipid particle is very similar to that of chylomicrons. They are insoluble and are usually bound to albumin and carried through the body by this route. Whether the lipids are used for calories or for storage is dependent on the insulin concentration as well as some other hormones such as catecholamines, ACTH, or glucagon. Each of these affect lipoprotein lipase activity. Heparin by continuous infusion has also been found to maximally stimulate the lipoprotein lipase activity and increase lipid clearance.^{6, 7}

Glucagon has been shown to be an important hormone in the endocrine setting in which lipids are utilized for calories. Jeejeebhoy⁸ investigated the use of various regimens in burn patients and tried a glucose system, a lipid system, and a glucose-lipid system on three groups of burn patients (Table I). He noted that with the glucose system there was a high insulin:glucagon ratio because of the high load of glucose favoring anabolism. In the lipid system, glucagon was found to be elevated and insulin levels depressed giving a low insulin:glucagon ratio. In the glucose-lipid system this ratio was intermediate.

TABLE I
VARIOUS REGIMENS IN BURN PATIENTS
(Jeejeebhoy, 1976)

	Glucose System	Lipid System	Glucose-Lipid System
Protein	9%	9%	10%
Glucose	91%	8%	45%
Lipid	—	83%	45%
Hormonal set (Insulin: glucagon)	High I:G	Low I:G	Intermediate I:G
Conclusion — Hormonal set as well as nutrients provided important.			

There was a positive nitrogen balance in all systems five days after initiating each regimen. The conclusion was that hormonal levels do not independently determine the anabolic or catabolic state of the patient, and that each hormonal set has an optimal input of nutrients and substrates required for anabolism.

Wolfe⁹ also felt that the energy substrate provided in the endocrine setting determines the amino acid utilization and again emphasized the importance of the insulin: glucagon (I:G) ratio in determining this setting. Wolfe determined that when intralipid is given alone, it is no better than starvation in nitrogen balance studies. When combined with amino acids and low doses of glucose, the nitrogen sparing seen with the use of intralipid was similar to high dose glucose and amino acids (the glucose system). Wolfe felt that the caloric supplementation that produced the greatest degree of nitrogen economy was usually associated with high insulin and low glucagon levels, or a high I:G ratio. The exception was a combination of amino acids and intralipid where insulin is not stimulated, but glucagon is very high giving a low I:G ratio. This emphasizes the importance of glucagon in the utilization of lipids for calories. It might be mentioned here that high glucagon levels have been demonstrated in trauma and burn patients. These are two groups of patients who may benefit from the lipid system.

There have been other nitrogen conservation studies demonstrating that the use of intralipids is comparable to the hypertonic glucose system with the following reservations: Long¹⁰ showed that fat alone was not nitrogen sparing; Yeo¹¹ demonstrated that adequate carbohydrate calories must also be provided; Hansen¹² found that fat composing one-third to two-thirds of the calories with adequate carbohydrate resulted in a positive nitrogen balance. Brennan¹³ showed that intralipid used without amino

acids provided only slightly better protein sparing than starvation alone. He pointed out that exogenous lipid of its own accord is not nitrogen sparing, but that certain limited amounts of amino acids must be available before lipid is protein sparing. Fitzpatrick¹⁴ thought that glucose or lipid could not be recommended without amino acids since there is a preferential sequestration of amino acids by muscle, depriving other vital organs of amino acid supplies.

Beside nitrogen sparing, intralipid protects the patient from essential fatty acid deficiency. First defined in rats as a dermatitis and failure to grow, essential fatty acid deficiency syndrome has been found in infants on formula testing or patients on long term IVs.⁶ This syndrome is reversed by intravenous fat emulsions or cutaneous application of sunflower seed oil which is high in polyunsaturated fats. The clinical deficiency appears more quickly in younger patients, especially during periods of pregnancy and during periods of rapid growth or increased metabolism, such as sepsis or burns. The essential fatty acids are linoleic, linolenic, and oleic acids. These essential fatty acids maintain the membrane integrity of various organs in the body. The symptoms that appear in the deficiency syndrome are secondary to the effects on these membranes, and include scaly skin and dermatitis, poor wound healing, increased capillary permeability, sparse hair growth, liver and kidney damage, mitochondrial changes, thrombocytopenia, and retardation in babies. There has been a triene:tetraene ratio⁶ defined that parallels the intake of linoleic acid. A ratio greater than 0.3 indicates a fatty acid deficiency. This is the same in young or old patients and may appear as soon as three weeks in certain situations.¹⁵ It can be reversed by intravenous fat emulsion that provides 4 per cent of the calories as linoleic acid. It has been found to occur within two weeks of starvation using sophisticated studies, such as phospholipid patterns, RBC membrane studies, and brain lipid studies.¹⁶ Man requires about 7½ gm/day of linoleic acid.¹⁵ Adipose tissue may serve as a source of essential fatty acids,¹⁷ but with standard continuous total parenteral nutrition using high glucose loads, there is a high insulin level preventing lipolysis and the use of the adipose tissue fatty acids. Essential fatty acid deficiency may be one cause of abnormal liver enzymes found in the glucose system of total parenteral nutrition.¹

Intralipid is available commercially as a 10-per cent emulsion composed of soybean oil, egg yolk phospholipids, glycerol, and distilled water. The essential fatty acids available in this emulsion are linoleic, oleic, palmitic, and linolenic acid. It has a

total caloric value of 1.1 calories/cc, including the fat, phospholipid, and glycerol components.^{1, 18} Particle size is that of chylomicrons, and they are not taken up by cells so there are no immunologic effects. The egg yolk phospholipids are not antigenic.⁵ The emulsion is stable, and storage at 0-4 degrees C for 18 months is possible.

Triglyceride levels are maximum at the end of the infusion and normal after four hours regardless of the amount of carbohydrate given. Free fatty acid concentration is known to be maximum post-infusion and returns to pre-infusion levels in about six hours.¹⁹ Free fatty acids have been found to peak lower as a higher carbohydrate load is given to a certain extent — if over 10-per cent carbohydrate solution is given, the insulin mechanism is stimulated resulting in decreased clearance of free fatty acids. The toxicity symptoms are most likely to occur from fat overloading either with improper administration or with loads greater than 5 gms/kg/day. No anaphylactic reactions have been reported in the literature. Symptoms most likely to occur from fat overloading are: hyperlipemia, back pain, vomiting, weight loss, gastrointestinal bleeding, anemia, thrombocytopenia, and altered coagulation studies.^{20, 21}

Considering hepatic toxicity, Thompson²² measured liver enzymes, various function studies and scans in patients, and found that after administration of intralipid, most patients had transient abnormal values. By electron microscopy he found a fat pigment in Kupffer cells in patients with abnormal liver function, and the pigment remained after the function returned to normal. He also found the pigment in patients without abnormal liver function. There was no discernible effect from this pigment in a five-year follow-up. This pigment could be present up to one year in liver biopsy after long and short term intralipid use.

Pulmonary function studies done by Greene²³ after intralipid administration showed carbon monoxide diffusing capacity was significantly decreased at rest and two levels of exercise. No symptoms occurred during exercise, but the exercise level was significantly decreased for four hours after intralipid infusion and returned to normal after 24 hours. The mechanism is thought to be on the basis of hyperlipemia, altering O₂ transport across the red blood cell (RBC) membrane and decreasing the membrane diffusing capacity across the alveolus. Increased blood viscosity and decreased capillary flow might also be involved. Heparin was found to reverse the pulmonary effects by inducing lipolysis so that triglycerides never exceeded 160 mg/100 ml.

Acute toxicity and pyrogenic reactions such as shivering, vomiting, chest pain, and hypercoagulability are felt to be due to intralipid particles trapped in the lung. This can usually be avoided with intermittent administration of the proper dose. Again, it is emphasized that no reports of anaphylactic reaction following the infusion of intralipid are found in the literature. The use of intralipid in infants who are jaundiced is contraindicated, since the intralipid may displace the bilirubin at its binding site on the albumin and increase the chance of kernicterus. With the proper dosage there are very few absolute contraindications. Among these might be lipid nephrosis, fatty liver, pancreatitis associated with hyperlipemia, anemia, blood coagulation disturbances, and hyperliproteinemia.¹² In patients who have chronic obstructive pulmonary disease and arteriosclerotic heart disease, intralipid should be used with caution,⁷ but these are not contraindications.

To be nitrogen sparing, intralipid must be administered with amino acids and carbohydrate calories. The usual dose is 3 gm/kg/day and may be given by a peripheral venous set-up via a Y-connector (*Figure 3*). The common tubing should be no longer than 6-8 inches before this regimen enters the venous blood. A 3 gm/100 ml amino acid and 10-per cent dextrose solution has an osmolality of about 1,500. When given via a Y-connector with intralipid (which is isotonic) the resulting solution is about 900 mOsm which is still hyperosmolar. However, intralipid has a vein sparing quality so that such a solution administered peripherally spares veins for a long period of time. Two infusion pumps are required, one for the intralipid and one for the peripheral amino acid and glucose solution.

Figure 4 shows an order sheet for the peripheral amino acid and carbohydrate solution. *Table II* demonstrates the fluid volume and calories administered with various flow rates for the amino acid and carbo-

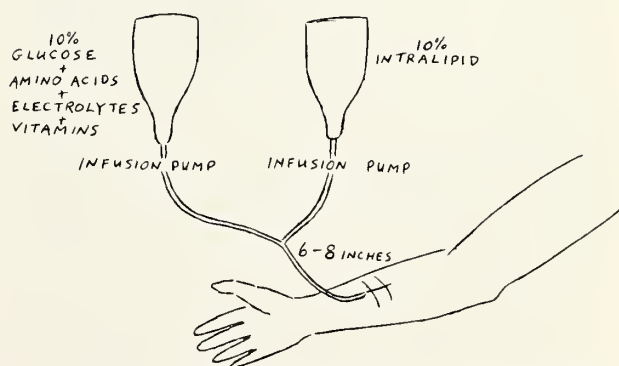


Figure 3. Administration setup for peripheral TPN using the lipid system.

PHYSICIAN'S ORDER

WESLEY MEDICAL CENTER

WRITTEN

TOTAL PARENTERAL NUTRITION (TPN) ORDER FORM

The finished solution is to contain the following total quantities ☒ per 100 ml.
☐ per bottle

Amino Acid 3 Gms.
 Sodium 4 mEq.
 Potassium 2 mEq.
 Calcium 0.45 mEq.
 Magnesium 0.2 mEq.
 Sulfate 0.2 mEq.
 Other _____ mEq.

Dextrose 10 Gms.
 Chloride ANION DIFF. mEq.
 Phosphate AS IN ~~PRE~~ FREAMINE
 Acetate _____ mEq.
 Lactate _____ mEq.
 Bicarbonate _____ mEq.
 Glucate _____ mEq.

Date

Hour

Ordered by Nurse

The finished solution is also to contain the following total quantities of miscellaneous ingredients per bottle. (1000 cc)

MVI Concentrate Inj. 1.5 ml.
 Folbesyn _____ ml.
 Cyanocobalamin Inj. 5 mcg.
 Regular Insulin _____ U.

Folic Acid 200 mcg.
 Other _____
 Heparin 1000 U.

CHECK BELOW THE DESIRED SOURCE OF AMINO ACID:

- ☒ FreAmine II 8.5% (Crystalline Amino Acid)
☐ Amigen (Casein Protein Hydrolysate)
☐ Aminosol (Fibrin Protein Hydrolysate)

FLOW RATE: 100 ml./Hour

A new order form is to be completed in its entirety for any change of an existing TPN solution formulation.

J. E. Boniguan, MD

FreAmine II 8.5%
 contains per 100 ml.)

Amino Acid...8.5 Gm.
 Sodium.....1.0 mEq.
 Phosphate...1.0 mM

Amigen 5%
 (contains per 100 ml.)

Amino Acid...5.0 Gm.
 Sodium.....3.5 mEq.
 Potassium...1.9 mEq.
 Calcium.....0.5 mEq.
 Magnesium...0.2 mEq.
 Phosphate...1.5 mM.
 Chloride....2.0 mEq.

Amigen 10%
 (contains per 100 ml.)

Amino Acid...10.0 Gm.
 Sodium.....6.0 mEq.
 Potassium...3.1 mEq.
 Calcium.....1.0 mEq.
 Magnesium...0.4 mEq.
 Phosphate...3.0 mM.
 Chloride....4.4 mEq.

Aminosol 5%
 (contains per 100 ml.)

Amino Acid...5.0 Gm.
 Potassium...1.7 mEq.
 Sodium.....1.0 mEq.
 Chloride....0.9 mEq.

Distribution:

- Yellow - Chart
 Pink - Pharmacy
 Blue - Physician (formula samples on reverse side)

HA-33(12-75 New)

Figure 4. Order sheet for peripheral amino acid and carbohydrate solution.

TABLE II

SAMPLE TPN REGIMENS USING 10% DEXTROSE AND 3 GMS AA'S PER 100 CC. (FLOW RATES FOR AA/CHO SOLUTION — 1,500 CC. INTRALIPID DAILY WITH EACH REGIMEN)

Flow rate	100 cc/hour	150 cc/hour
Amino acids	72 gm	120 gm
Carbohydrate	240 gm	400 gm
	(1,000 KCal)	(1,600 KCal)
Lipid	150 gm	150 gm
	(1,500 KCal)	(1,500 KCal)
Fluid volume	3,900 cc/day	5,100 cc/day
Total calories	2,500 KCal/day	3,100 KCal/day

hydrate solution (1,500 cc of intralipid/day). At a flow rate of 100 cc/hour for the amino acid and carbohydrate solution, a patient will receive 2,500 KCal/day. If the flow rate of the amino acid and carbohydrate solution is increased to 150 cc/hour, the fluid volume including the intralipid may be over 5 liters/day. This may be prohibitive in patients with cardiac or renal problems. However, in a patient who is losing a large amount of fluid from a fistula, this regimen may fit in perfectly with the management. These volumes can be compared to the glucose system, which is usually administered to supply 3,000 KCal when 3 liters/day are given.

Monitoring the patient receiving peripheral TPN is relatively simple. Base line laboratory tests may be helpful. Otherwise electrolytes and other laboratory work required is no different than for other patients receiving routine IVs. No clintests or daily blood sugars are required since large glucose loads are not used. Lipid clearance (triglycerides) should be checked on the second or third day, four hours after an infusion, to be sure the patient is clearing the lipids well. There is no central venous catheter placement, no dressing change, and no chest x-ray required.

The cost of total parenteral nutrition utilizing the glucose system and a central venous line versus the peripheral route using the lipid system is comparable.¹ It seems the primary expense in the pharmacy is the preparation of the amino acid and glucose solution, which is prepared under sterile conditions. If commercial preparations of amino acids are used, then this results in a less expensive means for providing total parenteral nutrition. A central venous line is also avoided in the lipid system, and the incidence of sepsis is diminished.

The following patients were treated at our hospital using intralipid and the previously described regimen:

Case One: A 63-year-old white male was admitted with multiple electrical burns suffered while trimming trees. Surface area burn measured about 30 per cent. Treatment required bilateral forearm amputations, multiple split thickness skin grafts and partial amputation of one foot. Admission weight was 133 lbs. Initial grafts did not take and there was poor wound healing and sepsis. Through a combination of tube feedings and TPN utilizing the lipid system, a total of 8,600 KCal/day was administered. Over the next six weeks multiple skin grafts were performed and healing was excellent. He was discharged weighing 123 lbs despite the amputations; he was ambulating and recovering well.

Case Two: A 67-year-old white female was admitted status one year post resection of carcinoma of the ovary and irradiation. She was receiving intermittent chemotherapy and presented with a mechanical bowel obstruction. A frozen pelvis was found at laparotomy and the obstructed bowel bypassed. Postoperatively she developed an enterocutaneous fistula. She was started on a regimen utilizing the lipid system to give her 2,250 KCal/day. At the end of 56 days she had gained 17 lbs and the fistula had closed.

Case Three: A 71-year-old white male was admitted with perforated diverticulitis and intra-abdominal abscess. The abscess was drained and a proximal colostomy was performed. Postoperatively the patient developed a small bowel obstruction. At the initial operation he had been started on 2,700 KCal/day utilizing the lipid system. Despite non-operative management the obstruction persisted. After three weeks from the initial operation, a second laparotomy was performed and the obstruction released. Over the next two weeks he recovered and was discharged.

Case Four: A 20-year-old white female was admitted with a history of malrotation for which multiple operations had been performed in the past. She presented with an intestinal obstruction, referred by the obstetrics service when she was six months pregnant. Her weight was 2 lbs below her non-pregnant weight. Fetal growth was reported to be below normal by sonogram. She was started on a regimen of 2,500 KCal/day using the lipid system. In three weeks she had gained 6 lbs and her serum albumin had risen from 2.7 to 3.2. At this point the regimen was altered to 1,800 KCal over 12 hours and she left the hospital each night. After four weeks of this regimen, she was discharged weighing 20 lbs over her initial weight. Ten days later she delivered a 5 lb 5 oz baby by cesarean section.

Case Five: A 25-year-old white male was admit-

ted following an automobile accident. Initial evaluation revealed pulmonary contusion and deteriorating respiratory status requiring mechanical ventilation and PEEP. A slow drop in hemoglobin prompted studies confirming a ruptured spleen. Splenectomy was performed, and postoperatively his respiratory status worsened; he became febrile; and pseudomonas was grown from a tracheal aspirate. A regimen was initiated utilizing the lipid system providing 2,000 KCal daily. Within three days his clinical status had improved and he was extubated one week later. He continued to recover completely and was discharged.

Summary

Intralipid administered via peripheral veins (the lipid system) is a useful complement to the glucose system of total parenteral nutrition. To be effective adequate amounts of amino acids and carbohydrate calories must be administered concomitantly. Administration and monitoring is not difficult. Certain clinical situations such as burns or severe trauma which have a favorable insulin:glucagon ratio may be appropriate endocrine settings for the use of the lipid system. Advantages include avoidance of the central venous line and of problems associated with the metabolism of large glucose loads. The incidence of sepsis is decreased and may be advantageous in pregnancy or infants. Compared to the glucose system, total parenteral nutrition using intralipid is similar in cost and with various regimens may even be less expensive.

When considering the lipid system of total parenteral nutrition, indications given by Heller²⁴ include two groups of patients. The first group includes the non-stressed, fasting adult, severely injured patient, and children in general. These patients have maximal activation of the fatty acid oxidation rate and their endogenous lipolysis is below their caloric requirement. In these patients exogenous fat in considerable proportion is helpful. The second group of patients includes those with moderately increased requirements. They have a maximally increased endogenous lipolysis and their oxidation rate is submaximal. This is seen with short term starvation. In this situation, exogenous fat should be only a moderate proportion of total calories, if used at all. This is particularly true if the patients have large fat stores and have a protein-calorie malnutrition rather than a caloric deficit. In essence, the lipid system is a useful complement to the glucose system in total parenteral nutrition if administered with appropriate

amounts of amino acids and carbohydrates and in the proper endocrine setting.

References

1. Symposium on fat emulsions in parenteral nutrition. AMA, 1976.
2. Cahill, G. F.: Starvation in man. *N. Engl. J. Med.* 282:668, 1976.
3. Gamble, J. L.: *Extracellular Fluid*. Harvard University Press, 1949.
4. Aoki, J. T. *et al.*: Metabolic effects of glucose in brief and prolonged fasted man. *Am. J. Clin. Nutr.* 28:507, 1975.
5. Schuberth, O.: Clinical results of intravenous nutrition of fat emulsions. *Nutr. Dieta.* 5:387, 1963.
6. Holman, R. T.: Essential fatty acid deficiency. *Progress in the Chemistry of Fats and Other Lipids*. Oxford, Pergamon Press, Vol. IX, pp. 275-348, 1968.
7. Regan, T. J. *et al.*: Myocardial blood flow and oxygen consumption during postprandial lipemia and heparin induced lipolysis. *Circulation* 23:55, 1961.
8. Jeejeebhoy, K. N. *et al.*: Metabolic studies in total parenteral nutrition with lipid in man. *J. Clin. Invest.* 57:125, 1976.
9. Wolfe, B. M. *et al.*: Substrate interaction in intravenous feeding. *Ann. Surg.* 186:518, 1977.
10. Long, J. M. *et al.*: Effect of carbohydrate and fat intake on nitrogen excretion during total intravenous feeding. *Ann. Surg.* 185:417, 1977.
11. Yeo, M. T. *et al.*: Total intravenous nutrition. *Arch Surg.* 106:792, 1973.
12. Hansen, L. M. *et al.*: Fat emulsion for intravenous administration. *Ann. Surg.* 184:80, 1976.
13. Brennan, M. F. and Moore, F. P.: An IV fat emulsion as a N sparer: Comparison with glucose. *J. Surg. Res.* 14:501, 1973.
14. Fitzpatrick, G. F. *et al.*: Nitrogen sparing by carbohydrate in man. *Surgery* 78:105, 1975.
15. Collins, F. D. *et al.*: Plasma lipids in human linoleic acid deficiency. *Nutr. Metab.* 13:150, 1971.
16. White, H. B., Jr., *et al.*: Blood lipid alterations in infants receiving fat-free alimentation. *J. Pediatr.* 83:305, 1973.
17. Blackburn, G. L. *et al.*: Protein sparing therapy during periods of starvation with sepsis or trauma. *Ann. Surg.* 177:588, 1973.
18. Bortz, W. M. *et al.*: Glycerol turnover and oxidation in man. *J. Clin. Invest.* 51:1537, 1972.
19. MacFayden, B. V. and Dudrick, S. J.: TG and FFA clearances in patients receiving complete parenteral nutrition using a ten per cent soybean emulsion. *Surg. Gynecol. Obstet.* 137:813, 1973.
20. Levenson, S. M. *et al.*: Two severe reactions following long-term infusion of large amounts of IV fat emulsion. *Metabolism* 6(6):807, 1957.
21. Watkim, D. M.: Clinical, chemical, hematologic and anatomic changes accompanying repeated IV administration of fat emulsion to man. *Metabolism* 6 (Suppl):785, 1957.
22. Thompson, S. W.: *The Pathology of Parenteral Nutrition with Lipids*. Springfield, IL, Charles C Thomas, pp. 121-127; 679-745; 801-862, 1974.
23. Greene, H. L. *et al.*: Relationship between intralipid-induced hyperlipemia and pulmonary function. *Am. J. Clin. Nutr.* 29:127, 1976.
24. Heller, L.: The effect of fat in complete parenteral nutrition on the nitrogen balance. Read before the IX International Congress of Nutrition, Mexico, D. F., Sept. 1972.

Pulmonary Sequestration

Diagnosis and Management

PHILLIP A. VISSER, M.D.,* and DAVID R. STEWART, M.D.,

Kansas City, Kansas

PULMONARY SEQUESTRATION is now a relatively well recognized, though a comparatively rare, congenital malformation of lung development. The term "sequestration," derived from the Latin verb "sequestrae," "to separate," was coined by Pryce in 1946. The sequestered lung is a portion of non-functioning pulmonary parenchyma that usually fails to communicate with the tracheobronchial tree. Its arterial blood supply is generally through an aberrant systemic artery, frequently arising from the aorta. Traditionally, if this accessory lung tissue has its own separate pleura it is called an extralobular sequestration. If the accessory lung is incorporated within a normal lung, without a separate pleural covering, it is called an intralobular sequestration.

Case Reports

We reviewed cases of pulmonary sequestration admitted to the University of Kansas Medical Center between 1954 and 1977. The charts of 11 patients were reviewed and pertinent data follow.

Case One: A 12-year-old white female was first seen by her regular physician in March 1976. At that time she gave a history of acute onset of fever and painless hemoptysis several weeks after falling off a horse and striking her right side against a fence. Hemoglobin was 7 gm, white blood count 10,400 with a slight left shift. Chest x-ray showed a right lower lobe infiltrate with no other evidence of acute parenchymal disease. She was transfused and the hemoptysis resolved. Following three weeks of treatment with antibiotics (culture results are unknown), a follow-up chest x-ray showed clearing of the right lower lobe pneumonitis, except for an area of ill-defined density in the lateral basal segment of the right lower lobe. This same ill-defined density was still present on a chest x-ray taken in April 1976. In January 1977 she was referred to the University of Kansas Medical Center with recurrent hemoptysis

The sequestered lung is a portion of non-functioning pulmonary parenchyma. Cases at the University of Kansas School of Medicine-Kansas City are presented and relevant data analyzed.

manifesting as mucous with small amounts of blood. On physical examination, the lungs were found to be clear to auscultation and percussion with hemoglobin, 13.2 gm; WBC, 9,500 with a slight left shift. Chest x-ray showed a persistence of the ill-defined density in the right lower lobe. On January 6, 1977, tomograms of the right lung showed a wedge-shaped radiodensity in the lateral basal segment of the right lower lobe with its apex directed toward the right hilum. Differential diagnosis was sequestration, atelectasis, or infarction. On the following day, she underwent bronchography; results were described as normal, with no evidence of mass, sequestration, or obstruction. She was discharged to be readmitted on January 11 for right heart catheterization, with pulmonary cineangiography. This revealed no anomalous arterial supply to the right lung. On August 22 she was again admitted with hemoptysis. An aortogram showed an aortic blood supply to the right lower lobe via right intercostal arteries. With a pre-operative diagnosis of pulmonary sequestration, she was taken to surgery on August 25 at which time a right lower lobectomy was performed. At the time of operation a 4 cm diameter, firm, bluish lesion was found in the superior segment of the right lower lobe. Adhesions were present in the lateral pleura and the diaphragm. Several small vessels were noted to penetrate the lateral pleural adhesions with the main blood supply coursing through the right diaphragm. The pathology report on the submitted specimen showed a foreign body occluding a segmental bronchus, with necrosis of the segment distally. An artery was noted to enter the necrotic segment directly. Diagnosis was incomplete pulmonary sequestration due to frank communication with the bronchial system and absence of bronchial cysts. She was discharged on September 1, 1977, and has had no recurrence of hemoptysis.

* Resident in Surgery.

Chief, Section of Pediatric Surgery.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. Stewart, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

Case Two: A 55-year-old white male, who described himself as in excellent health, was first admitted to UKSM July 25, 1961. During May he experienced fever, chills, and malaise. A chest x-ray in May showed a right lower lobe mass. Although his symptoms resolved on oral penicillin, serial chest films continued to show a persistent right lower lobe mass. He also admitted to a 5-pound weight loss over the three months prior to admission. Past history revealed one episode of pneumonia five years prior to admission and a 60-pack/year history of cigarette smoking. Review of old chest x-rays from as late as 1950 revealed the ever-present right lower lobe mass. Physical examination was unremarkable, except for a 10 cm area at the base of the right scapula where a rub and rales were noted, which did not clear with coughing. Acid-fast bacillus culture was negative. With an admitting diagnosis of bronchogenic carcinoma, he was taken to surgery. Bronchoscopy revealed a normal bronchial tree. Right scalene lymph node biopsy showed reactive hyperplasia with no evidence of malignancy. Bronchial washings from the bronchoscopy grew no organisms and no evidence of malignancy was found on cytological examination. He was discharged, at his request, for a one-month rest. On August 7 he was readmitted for exploratory thoracotomy and resection of lung cancer. At operation he was found to have an intralobular sequestration of the right lower lobe with arterial supply from the thoracic aorta through the pulmonary ligament. A right lower lobectomy was performed. Pathological examination on the submitted specimen revealed no communication of normal pulmonary vessels and no evidence of communication between the sequestered lobe and the normal bronchial tree. Multiple bronchial cysts were found within the sequestered lobe.

Case Three: A 28-year-old white male was admitted to UKSM on October 3, 1954, with a chief complaint of a sharp, knife-like pain around the rib margins, beginning ten days prior to admission. Two days after onset, it localized to the left lateral chest. Review of past history revealed two similar episodes, two and four years prior to admission. Each episode lasted approximately 1½ weeks and was treated successfully with antibiotics. He noted that both previous episodes terminated after a feeling of "something breaking loose," followed by expectoration of copious amounts of purulent material. Admission physical examination was unremarkable. Chest x-ray showed a left lower lobe consolidation, and left lower lobe tomography showed no evidence of cavitation or abscess. Chest x-ray one year prior to admission had shown no diagnostic abnormality. On

October 8 he was taken to surgery. Following negative bronchoscopy, left thoracotomy revealed an intralobular sequestration of the left lower lobe. Arterial supply was from the descending thoracic aorta. Left lower lobectomy was performed. Examination of the submitted specimen showed a thin, fibrous band forming a partial septum between the apex of the left lower lobe and a large, firm, fluid-containing mass, which made up a large portion of the specimen. Incomplete septae were noted to partially divide the sequestered lobe. No communication with the normal bronchial tree was found. Two small arteries entered the base of the specimen on the medial aspect and could be traced through the septae of the sequestered lobe.

Case Four: A four-year-old black male was first admitted to UKSM on May 8, 1959, with a diagnosis of bilateral inguinal hernias. At the time, his mother gave a past history of frequent upper respiratory infections. Physical examination was unremarkable, except for the presence of a right inguinal hernia with hydrocele. He was afebrile. Serial white blood counts ranged from 5000-9000. Admission chest x-ray showed an infiltrate in the right lung base with a 1.5 cm cavitary lesion in the posterior segment of the right lower lobe. Diagnostic possibilities entertained included lung abscess or congenital cyst. Upper gastrointestinal series yielded normal results. Tuberculosis and histoplasmosis skin tests were negative. He was discharged on May 17, after an unremarkable right inguinal herniorrhaphy. He was lost to follow-up for eight years; then on August 30, 1967, a 5 x 3 cm soft tissue density was again noted in the right lung base with wheezing in the right lower lung fields. On October 8 he was again admitted to UKSM for further work-up of a persistent right lower lung mass. Surgery was scheduled, but he was discharged against medical advice before the operation could be performed. On October 24 he was again admitted; two days later he underwent bronchography which revealed a cyst-like structure occupying the inferior aspect of the right lower lobe. The bronchi were seen to diverge around the cyst region, and no communication with the bronchial tree was noted. An aortogram performed on October 30 showed a right lower lobe sequestration with arterial supply from the descending thoracic aorta and venous return by way of the pulmonary vein to the right atrium. At operation on November 3, a right lower lobectomy was performed for an intralobular sequestration of the posterior basal segment of the right lower lobe. The pathology report on the submitted specimen revealed a bronchiectatic remaining lung, and no communication between the bronchus

of the sequestered lobe and the normal bronchial tree.

Results

Age and Sex Distribution

The experience of this institution consists of eleven patients — six males and five females. Ages ranged to 55 years. Eight patients were in the pediatric age group (under 16 years). Two were less than one day old, weighed less than 1000 gm at delivery and died in the neonatal period. One was stillborn. The three adults — two males and one female — were 28, 36, and 55 years of age at the time of diagnosis.

Presenting Complaints (Table I)

Two (age two weeks and three months) presented with tachypnea, poor feeding, poor weight gain since birth and a history of several episodes of upper respiratory tract infections; a third was stillborn. The remaining three pediatric-aged patients presented with recurrent hemoptysis, persistent right lower lobe density first discovered at the time of admission for bilateral inguinal herniorrhaphy, and recurrent bouts of pneumonitis thought to be associated with leukemia and its treatment.

Two of the three adults presented with a history of multiple admissions for recurrent pneumonia. The third presented with a sharp pain at the left rib margin on deep inspiration. She gave a history of two similar episodes of pain, both of which terminated with expectoration of large amounts of purulent sputum.

Associated Anomalies

Associated anomalies were found in only two of 11 patients. A 900 gm female infant, stillborn to a

mother with hemolytic uremic syndrome, had a patent ductus arteriosus and a patent foramen ovale discovered at postmortem examination. The second neonate had truncus arteriosus, Type II, and severe truncal valve insufficiency resulting in death within 24 hours. The first had an extralobular sequestration of the left lower lobe; the second, an extralobular sequestration of the right lower lobe. The third neonate, 770 gm birth weight, died within the first day of life of respiratory distress syndrome. An intralobular sequestration of the left lower lobe was found at postmortem examination. No associated anomalies were noted.

Radiographic Abnormalities (Table II)

Nine of the 11 patients had chest x-rays at some time during one or more admissions. Six showed a persistent mass or infiltrate in the involved pulmonary lobe; one was read as normal; two showed cardiomegaly.

Bronchograms were performed in three patients. Two showed a normal pulmonary tree. The third showed a cyst-like structure in the inferior lobe on the right side. Bronchi were shown to diverge around this region. No communication was noted between the cyst-like mass and the remainder of the bronchial tree. At operation, this patient had an intralobular sequestration of the posterior basal segment of the right lower lobe.

Tomograms of the lung were performed in two of the 11 patients. In both cases the infiltrate discovered on the routine chest x-ray was confirmed. No new diagnostic information was obtained in either case.

TABLE I
PULMONARY SEQUESTRATION — UKSM
PRESENTING COMPLAINTS

	Extra- lobular	Intra- lobular	Total
Recurrent respiratory tract infection	2	2	4
Tachypnea; respiratory distress	1	1	2
Poor feeding	1	1	2
Recurrent hemoptysis		1	1
Persistent infiltrate on chest x-ray		1	1
Stillborn (autopsy)	1		1

TABLE II
PULMONARY SEQUESTRATION — UKSM
RADIOGRAPHIC ABNORMALITIES

	Extra- lobular	Intra- lobular	Total
Chest x-ray			
Persistent mass or infiltrate	2	4	6
Cardiomegaly	2		2
Normal		1	1
Bronchography			
Normal		2	2
Cystic mass		1	1
Tomography			
Confirmed infiltrate	1	1	2
Arteriography			
Sequestration	1	3	4
Other		1	1

TABLE III
PULMONARY SEQUESTRATION — UKSM
LOCATION OF LESION AND BLOOD SUPPLY

Age	Sex	I/E	Location	Arterial Supply	Venous Return
1d	M	E	RLL		
1d	F	E	LLL		
3m	F	E	RLL	AA	T. IVC
7y	M	E	LLL	DTA	T. IVC
36y	F	E	RUL		
1d	M	I	LLL		
2w	F	I	LLL	DTA	L.A.
4y	M	I	RLL	DTA	R.A.
12y	F	I	RLL	DTA	
28y	M	I	LLL	DTA	
55y	M	I	RLL	DTA	

d = day old

w = weeks old

m = months old

y = years old

AA = abdominal aorta

DTA = descending thoracic aorta

T. IVC = thoracic inferior vena cava

L.A. = left atrium

R.A. = right atrium

E = extralobular sequestration

I = intralobular sequestration

RLL = right lower lobe

RUL = right upper lobe

LLL = left lower lobe

Arteriography or cardiac catheterization was performed in five of the 11 patients. An accurate diagnosis of pulmonary sequestration was made in four of the five cases.

Other Diagnostic Tests

Bronchoscopy was performed in three patients. In all three a normal bronchial tree was described. Scalene lymph node biopsies were negative in two patients (both adults). Two lung biopsies were non-diagnostic in a single adult patient. An upper gastrointestinal examination was normal in one 4-year-old patient. Two adults and one child underwent a combination of skin testing for tuberculosis and histoplasmosis, sputum cultures (routine and AFB), and examination of bronchial washings. All were negative.

Location of the Lesion (Table III)

Lesion location was reported in all 11 patients and is summarized in Table III. Six were found on the right side and five of these were extralobular. All five of the left-sided lesions were found in the left

lower lobe. Three were intralobular and two were extralobular.

Blood Supply

Comments concerning blood supply to the sequestered lobe could be found in only seven cases. Table III summarizes these results. In six of the seven, blood supply to the sequestered lobe was derived from the descending thoracic aorta. The seventh received its arterial supply from a branch of the abdominal aorta, which penetrated the diaphragm on the right. Venous return was sporadically reported; direct to left atrium; two to the thoracic inferior vena cava.

Management and Outcome

Only five of the 11 patients were treated surgically. Three underwent right lower lobectomy and one left lower lobectomy. The fifth underwent ventricular septal defect closure at seven years of age. He was subsequently lost to follow-up. All four patients operated on for pulmonary sequestration were alive and well at the time of last follow-up.

Of the six unoperated patients, three died in the neonatal period. One three-month-old female with sequestration of the right lower lobe as the only finding at the time of cardiac catheterization, was lost to follow-up. Admission had been for poor feeding, poor weight gain, and frequent upper respiratory infections. One 36-year-old female died of fulminant pneumonia. Diagnosis was subsequently made on postmortem examination. The sixth patient was treated for five years for acute lymphocytic leukemia. An extralobular sequestration of the left lower lobe was discovered at postmortem examination. During his five years of treatment for leukemia, he experienced frequent bouts of pneumonia, each attributed to the natural history of leukemia and its treatment.

Discussion

Pulmonary sequestration is very uncommon. Its recognition is important, however, since it is readily correctable surgically. Carter, in a review of 233 cases, suggested that pulmonary sequestrations are the cause of approximately 1.1-1.8 per cent of all pulmonary resections.¹ He found intralobular sequestration to be more prevalent (91%) than the extralobular form (9%). This differs from our finding of almost equal prevalence in this series (5 extralobular vs 6 intralobular). A slight male predominance is reported in the literature, with male:female ratios approximately 1.5:1.0 for intralobular sequestration and 3:1 for extralobular sequestration.

Our series is in rough agreement with the reported male : female ratio for the intralobular variety (4 : 2), but there is a slight female predominance (2 : 3) in our extralobular series.

Pulmonary sequestration has been reported in patients of all ages. Clinically, most problems occur in the first two decades of life. Turk reported that more than 50 per cent become symptomatic before 20 years of age.² It is rare in patients over 40 years, but onset of symptoms may occur years before final diagnosis.

The presenting complaints seen in this series (*Table I*) are fairly typical, generally centered around a history of recurrent pulmonary infections. Other clinical manifestations reported in the literature include hemoptysis, poor feeding (in infants), chest pain, and respiratory difficulty. At the time of diagnosis, 15-35 per cent of patients are asymptomatic. This appears to be especially true for extralobular sequestrations.

Arterial blood supply to the sequestered lung tissue is almost always systemic. It usually arises from the thoracic or abdominal aorta, most commonly passing through the inferior pulmonary ligament. The reported incidence of subdiaphragmatic origin of the artery varies from 66-85 per cent. There are reports, however, of origin of the artery from the superior mesenteric artery, intercostal artery, and right inferior phrenic artery. More than one artery is present in approximately 20 per cent of reported cases.¹

Venous drainage is generally reported to be by pulmonary veins, in cases of intralobular sequestration, and into azygos, hemiazygos, or portal veins in extralobular sequestration. While documentation of venous drainage is sparse in our series (4 of 11 cases), it can be seen in *Table III* that the above generalizations do not always hold true.

The presence of a systemically arterialized pulmonary segment, draining into the pulmonary venous system, sets the stage for possible development of a left-to-right shunt. Several reports on the cardiodynamic effects of pulmonary sequestration appear in the literature.^{3, 4} Frequently, cardiac performance returns to normal, either by resection of the sequestration or merely by ligation of the anomalous systemic artery.

Classically, pulmonary sequestrations do not communicate with the normal tracheobronchial tree. It is extremely rare in extralobular sequestrations and is probably initially absent in all cases of intralobular sequestration. However, secretion of mucus within the sequestration results in cystic swelling, with subsequent compression and atelectasis of surrounding

pulmonary tissue. Superimposed infection may lead to erosion into a nearby airway. These areas of communication are generally small and cannot be demonstrated bronchographically. At bronchoscopy they are identified only by egress of pus or blood. Once infection has been established, complete resolution is difficult to achieve, due to inadequate drainage, producing the clinical picture of recurrent infection usually associated with pulmonary sequestration.

Most series report pulmonary sequestrations to be more common on the left side, more likely to involve the lower lobe, and most frequently localized to the posterior basal segment. In our series there was an equal distribution between right and left sides. With the exception of one right upper lobe extralobular pulmonary sequestration, all lesions were found in the lower lobe. No difference existed between extralobular and intralobular sequestrations.

The embryology of these lesions is not yet well understood. Multiple theories of origin have been proposed. The lung makes its first appearance in the 3 mm embryo as a bud growing out of the ventral surface of the foregut. This bud has branched to form two primary bronchi in the 4 mm embryo, and lobar branches (two left and three right) appear by the 7 mm stage. These later arborize to form the entire bronchopulmonary tree. During the early period of development, the foregut lies in close approximation to the dorsal aorta and is covered by a vast plexus of vessels, the splanchnic plexus. As development of the pulmonary anlage proceeds, a portion of the splanchnic plexus (postbranchial pulmonary plexus) is carried with the developing pulmonary system. The pulmonary artery originates from the sixth aortic arch and ramifies into the postbranchial plexus to establish the pulmonary arterial network. Connections to the aorta usually degenerate. If normal bronchial arborization fails to take place, a pulmonary segment may develop that maintains its connection with the systemic arterial system.

Gerle, *et al.*,⁵ after reviewing 13 cases of pulmonary sequestration with highly organized communications to the gastrointestinal tract (ten to the lower esophagus and three to the stomach), have proposed an intriguing modification of a theory originally proposed by Eppinger and Schauenstein.⁶ They suggest that if one searches diligently, a remnant of a connection between gastrointestinal tract and sequestration can be found. Thus, they feel pulmonary sequestration would be more appropriately named congenital bronchopulmonary-foregut malformation.

Complex, multisystem congenital anomalies have been reported in 15-40 per cent of cases of pulmo-

nary sequestration.¹ That most of these are found with associated congenital anomalies is a striking feature of intralobular sequestration. In our series of 11 patients, only two — both with extralobular sequestration — were found to have associated anomalies; a patent ductus arteriosus and patent foramen ovale were found at postmortem examination in a 900 gm, stillborn female infant; Truncus arteriosus, Type II, and severe tricuspid valve insufficiency were found at cardiac catheterization in a one day old female neonate who presented with tachypnea, cardiomegaly, and congestive heart failure. Eventration of the diaphragm and diaphragmatic hernia are the most frequently associated anomalies reported in the literature; the incidence varies from 15-30 per cent of reported series.¹ It is not unusual for the diagnosis of pulmonary sequestration to be made at the time of operation for diaphragmatic hernia. Other reported anomalies include pectus excavatum, pulmonary agenesis, ectopic pancreatic tissue, and foregut duplication or diverticulum.

A diagnosis of pulmonary sequestration should be considered in any patient — especially a child or young adult — with a history of recurrent, localized pulmonary infection. The differential diagnosis includes pneumonia, emphysema, bronchiectasis, lung abscess, and bronchogenic carcinoma.

Other than the history, the most useful diagnostic aid is the anterior-posterior roentgenogram of the chest. It will, almost invariably, show some abnormality. Only one of nine patients receiving chest x-rays in this series was reported as normal. Most commonly x-ray will show an area of localized pneumonitis or a wedge-shaped region of increased density — retrocardiac if the sequestration is on the left, paravertebral if the lesion is on the right. An air-containing cyst — with or without a fluid level — may also be seen.

The literature suggests that neither bronchoscopy or bronchography are helpful. Carter reported the most likely finding at bronchoscopy was evidence of pus. Bronchoscopy was performed in 11 of 32 patients reported by Zumbro, *et al.*⁷ All 11 were abnormal, showing displacement of the normal basilar bronchial tree. Communication with the bronchial tree was not identified. Bronchography was performed in four of 15 patients reported by Buntain, *et al.*⁸ Again, all were abnormal and usually showed a normal complement of bronchi with displacement of terminal bronchioles by a space-occupying lesion. Contrast media rarely, if ever, enter the sequestered pulmonary tissue. In our series, bronchoscopy was performed on three patients, and all were normal. One patient had a normal bronchogram on two

separate occasions. Another showed terminal bronchioles diverging around a cyst-like structure already detected on the anterior-posterior chest x-ray.

The value of aortography is questioned by some authors, but it is the only means — other than thoracotomy — of establishing a definitive diagnosis. Certainly aortographic establishment of the diagnosis may prevent an asymptomatic patient from undergoing thoracotomy. It is also helpful in differentiating pulmonary sequestration from other lung abnormalities such as arteriovenous fistula, cystic adenomatoid malformations, and bronchogenic cysts. Its proponents recommend aortography for determining the source of the aberrant blood supply in all cases of suspected pulmonary sequestration. This argument seems to stem from three papers from the 1940s, reporting death due to exsanguination when an overlooked aberrant vessel retracted into the mediastinum or below the diaphragm. In our series, aortography or cardiac catheterization was performed on five patients. Four correctly documented the presence of a pulmonary sequestration.

Once the diagnosis has been established, the asymptomatic patient probably requires no further treatment. Most symptomatic patients present with recurrent pulmonary infections. Since reinfection is inevitable, thoracotomy during a quiescent period is the only rational approach. Extralobular sequestration can almost always be managed by simple total excision of the anomalous lobe. Some success with segmental resection has been reported in patients with intralobular sequestration. Telander *et al.* reported successful segmentectomy in one of six patients;⁹ Zumbro *et al.*, in five of 23 patients.⁷ In general, however, chronic intralobular infection makes segmental resection impossible. Thus, lobectomy remains the operation of choice for intralobular sequestration.

References

1. Carter, R.: Pulmonary sequestration. *Ann. Thorac. Surg.* 7:66, 1969.
2. Turk, L. N. and Lindskog, G. E.: Importance of angiographic diagnosis in intralobular pulmonary sequestration. *J. Thorac. Cardiovasc. Surg.* 41:299, 1961.
3. White, J. J. *et al.*: Cardiovascular and respiratory manifestations of pulmonary sequestration in childhood. *Ann. Thorac. Surg.* 18:286, 1974.
4. Solit, R. W.; Fraimow, W.; Wallace, S. and Cohn, H. E.: The effect of intralobular pulmonary sequestration on cardiac output. *J. Thorac Cardiovasc. Surg.* 49:844, 1965.
5. Gerle, R. D.; Jaretzki, A.; Ashley, C. A. and Berne, A. S.: Congenital bronchopulmonary-foregut malformation. *N. Engl. J. Med.* 278:1413, 1968.
6. Eppinger, H. and Schauenstein, W.: Krankheiten der Lungen. *Ergebn. Sllg. Path.* 1:267, 1902.

(Continued on page 287)

Partial Splenectomy

Case Report of a Six-Year-Old Male

RICK WINDLE, M.D.,* YONG U. LEE, M.D.,† and
MEDO MIRZA, M.D.,‡ Wichita

TRAUMA is the leading cause of mortality in the age group 1-14 years. The highest incidence of injury occurs in the 2-4 year age category.¹ This is the same age group in which it has been established that there is an increased risk of sepsis after splenectomy post traumatic injury. For this reason, many physicians are now beginning to consider and make use of partial splenectomy or splenorrhaphy² for splenic trauma.

Case Report

A 6-year-old male was involved in a car-pedestrian accident. On admission to the emergency room he complained of left upper leg pain and pain in the left side of his abdomen.

Pertinent results of physical examination showed blood pressure, 104/52; pulse, 125. Abdominal examination showed decreased bowel sounds, and tenderness in the left upper quadrant and left lower quadrant with some rebound present. X-ray revealed fracture of the upper femur on the left side.

Emergency room examination of the patient revealed hemoglobin, 12.8; WBC, 26,500; and 80-100 RBCs in the urine. Intravenous pyelogram (IVP) was normal. Paracentesis showed 2,000,000 red cells in the peritoneal fluid. Combined findings of peritoneal tap and physical examination effected a decision for surgery.

At the time of surgery findings included hemoperitoneum of 100 cc, a large retroperitoneal hematoma involving the left flank and pelvis, and a spleen showing avulsion of the lower pole with lacerations of the body. Large mattress sutures were used for hemostasis of the upper spleen. The se-

verely injured segment comprised about one-third of the total organ and was removed.

Postoperative course included pneumonia — possibly due in part to the initial trauma. Abdominal sonogram was negative on the seventh postoperative

The accepted knowledge of increased sepsis post-splenectomy in young children has made for the advent of spleen-conserving surgery. The example discussed underscores the fact that splenic injury may be managed by several methods including large mattress suture, vessel ligation, and topical hemostatic agents. Clinical observation and spleen scan are used as tools to document the patient's complete recovery.

day, and the liver-spleen scan showed a discreet area of radiotracer distribution beyond the inferior margin of the spleen consistent with a controlled splenic capsular disruption.

The patient remained stable; the pneumonia resolved; the fracture was treated by traction and cast; he was discharged on the 32nd postoperative day, and has done well since.

Comment

For several years there has been controversy over splenectomy in young children. This has been based on the findings as reviewed by Fischer³ that there is an overall 0.24-0.58 per cent mortality rate from sepsis in the post-splenectomy patient group. This is estimated to be 50 times greater than the normal population. Ratner² points out that three splenic functions may be involved in post-splenectomy sepsis — *i.e.* trapping, antibody production, and phagocytosis. The spleen clears the blood stream of particulate antigens, especially encapsulated organisms. It produces specific antibodies; IgM was found to be significantly decreased in post-splenectomy patients, regardless of the reasons for splenectomy. The spleen elaborates opsonins that coat bacteria to make them more easily identifiable. Other phagocytosis-promoting substances — such as

* Surgical Resident, Wesley Medical Center, Wichita.

† Former Surgical Resident, Wesley Medical Center, Wichita.

‡ Clinical Assistant Professor of Pediatrics and Surgery, UKSM-Wichita, and Assistant Director of Surgical Education, Wesley Medical Center, Wichita.

Presented at the annual meeting of Kansas Chapter, American College of Surgeons, Salina, November 11-12, 1978.

Address reprint requests to Dr. Mirza, Wesley Medical Center, 550 No. Hillside, Wichita, KS 67214.

tuftsin, which coats granulocytes — are produced in the spleen. These splenic functions comprise the early response to infection, as the spleen is the only place in the body in which blood-borne substances are brought into direct contact with the body's own defenses.

Gates⁴ finds that this post-splenectomy sepsis occurs most commonly in children under 4 years of age. These overwhelming infections may become evident within days of surgery, and most are confined within 2-3 years post-operation. They are characterized by an abrupt onset, florid bacteremia, and a high incidence of disseminated intravascular coagulation. Death may occur within hours of the onset of symptoms in up to 80 per cent of cases. The mortality is particularly high in those children with underlying lymphoreticular or hematopoietic diseases. It is well established that *D. pneumonia* is the most frequent organism responsible, followed by *Strep.* and *H. influenza*. Penicillin prophylaxis is now advocated for all splenectomized children, regardless of the reasons for splenectomy. Medication is continued for 18 months to 3 years. This is substantiated by Claret.⁵ There has also been increased use of the vaccine against pneumococcus (Pneumovax) in aiding in the prophylaxis against pneumococcal septicemia. Pneumovax is effective only in children 2 years of age or older.

Evaluation of possible splenic trauma in the pediatric patient is essential to determination of the optimum time to operate. Estimated blood volume in a child is 7-8 per cent of body weight. A child ordinarily becomes hypotensive at about 20 per cent loss of that blood volume. With hypotension and falling hematocrit, the possibility of splenic trauma should be considered if the history and physical examination indicate the possibility of abdominal injury.

Philippart¹ suggests that the pediatric abdomen can be easily evaluated in a reassured child because of the thin and elastic abdominal wall. Paracentesis, or a lavage, can be considered when there is any question of the child having complicating multiple injuries, or if a head injury exists. When lavage is used, the recommended volume of lactated Ringer's or normal saline is about 10 ml/kg. Philippart, Harris^{1, 6} and others point out the use of isotopic imaging of the spleen for aid in evaluation. At Wesley we make liberal use of scanning if any clarification of injury is needed. Philippart limits the use of splenic arteriography to those children with known left renal injury who also have clinical findings suggestive of possible splenic injury. An IVP should be done initially to evaluate renal injury.

Surgery may be indicated with one or several of the following findings: evidence of bleeding with falling hematocrit; positive abdominal tap; positive scan showing disruption of the capsule or extensive injury; or physical findings compatible with serious injury. In our patient, physical findings combined with the positive paracentesis and apparent normal integrity of the left kidney were used as criteria for operative intervention.

Some physicians delay surgery in light of a positive scan with a stable patient. Gates⁴ states that the defects most often reduce over a period of time as the patients are followed and they become symptom free. What period of time is necessary to be fairly well assured of safety from bleeding is inconclusive and is a clinical judgment.

When surgery is necessary, accurate knowledge of the splenic arterial supply allows for more expedient management of injury. Sherman⁷ points out that splenic artery ligation may significantly aid in obtaining hemostasis and does not cause necrosis of the spleen, as shown by normal postoperative scan in one of his patients. This concept deserves consideration in the appropriate clinical setting. He reminds us that the branches of the splenic artery are highly variable, but bifurcation almost always occurs outside the spleen itself. This allows for easy control to a particular segment, and temporary or permanent control to the main artery. In addition, the intrasplenic arterial supply runs transversely, allowing for a relative anatomic plane for transection.

In terms of operative technique, Ratner² has developed an excellent summary.

Technique

The essentials of our operative technique include:

1. use of midline trauma incision
2. mobilization of spleen into wound
3. attempt at suture repair except:
 - a. extensive major vessel laceration
 - b. extensive splenic fragmentation
 - c. patient instability due to major associated intra- or extra-abdominal injury
4. use of large (0-0, 2-0, 3-0) chromic suture material
 - a. figure of eight or simple sutures
 - b. reinforcing pledgets not necessary
5. individual ligation of large bleeding vessels
6. management of oozing surfaces by
 - a. topical hemostatic agents (Avitene, Gelfoam)
 - b. omentum
7. acceptability of hemostasis comparable to that of hepatic or renal repair
8. no use of drains

Many authors concur with the above conclusions. In our case report we used the large mattress sutures for hemostasis.

Follow-up for these patients is done with repeat liver-spleen scans at one- and six-week intervals postoperatively. This, of course, is secondary to repeated clinical examinations. A common concern is the possibility of delayed rupture. It is unlikely, but the possibility of increased susceptibility to future trauma must be evaluated.

Sherman⁷ and others have suggested that successful splenic repair for trauma should stimulate a reevaluation of other conditions for which splenectomy has been recommended. Considerations should be given to factors such as congenital hemolytic diseases, cysts, hamartomas, and hypersplenism. Serious questions have been raised as to the value of splenectomy in association with the staging procedures for Hodgkin's disease. There is some discussion and trial at present of splenic biopsy in these staging procedures. In the future, where total splenectomy is necessary, there may be a development of techniques for reimplantation of tissue intraperitoneally or subcutaneously. In addition, it appears that splenic function may be protective in adults as well as in children, and that splenorrhaphy rather than removal will become the surgical dictum.⁸

Conclusion

Successful repair of serious splenic injury can be accomplished with a variety of techniques. Partial splenectomy or splenorrhaphy should be considered in the pediatric and adolescent age group, especially in those 5 years of age or under.

References

1. Philippart, Arvin I.: Blunt abdominal trauma in childhood. *Surg. Clin. North Am.* 57:151-163, 1977.
2. Ratner, M. H.; Garrow, E. and Valda, V.: Surgical repair of the injured spleen. *J. Pediatr. Surg.* 6:1019, 1025, 1977.
3. Fischer, K. C. and Eraklis, A.: Diagnostic nuclear medicine scintigraphy in the follow-up of pediatric splenic trauma treated without surgery. *J. Nucl. Med.* 19:3-9, 1978.
4. Gates, G. F.: Sepsis in children following splenectomy. *J. Nucl. Med.* 19:113-115, 1978.
5. Claret, I. and Morales, L.: Immunologic studies in the post-splenectomy syndrome. *J. Pediatr. Surg.* 10:59-64, 1975.
6. Harris, B. H.; Morse, T. S. and Weidenmier, C. H.: Radioisotope diagnosis of splenic trauma. *J. Pediatr. Surg.* 3:385-389, 1977.
7. Sherman, N. H. and Asch, M. J.: Conservative surgery for splenic injuries. *Pediatrics* 2:267-271, 1977.
8. Robinette, C. D. and Fraumeni, J. F., Jr.: Splenectomy and subsequent mortality in veterans of the 1939-45 war. *Lancet* 2:127-129, 1977.

Spastic Ileus

(Continued from page 255)

20. Robertson, J. A.; Eddy, W. A. and Vosseler, A. J.: Spontaneous perforation of the cecum without mechanical obstruction. *Am. J. Surg.* 96:448, 1958.

21. Wojtalik, R. S.; Lindenauer, S. M. and Kahn, S. S.: Perforation of the colon associated with adynamic ileus. *Am. J. Surg.* 125:601, 1973.

22. Von Mikulicz-Radecki: Chronic ileus caused by malignant invasion of posterior abdominal wall. *Br. Med. J.* 1:891, 1949.

Pulmonary Sequestration

(Continued from page 284)

7. Zumbro, G. L. et al.: Pulmonary sequestration. *Ann. Thorac. Surg.* 20:161, 1975.

8. Buntain, W. L. et al.: Pulmonary sequestration in children: A twenty-five year experience. *Surgery* 81:413, 1977.

9. Telander, R. L.; Lennox, C. and Sieber, W.: Sequestration of the lung in children. *Mayo Clin. Proc.* 51:578, 1976.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

**Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612**



Current COMMENT

Acne Vulgaris

THELDA KESTENBAUM, M.D.,* *Kansas City, Kansas*

ACNE VULGARIS accounts for 20-25 per cent of visits made by patients to dermatologists, and affects the majority of teenagers in the United States and Europe. Its prevalence makes a working knowledge of this condition important to physicians in general practice. The purpose of this article is to review the current concepts on the pathogenesis, diagnosis, and treatment of acne vulgaris.

Pathogenesis

Sebum, bacteria, and the anatomy of the pilosebaceous unit have all been studied for their possible roles in the production of acne. Diet, climate, and stress have also been implicated, but their role is not clearly understood.

Various components of sebum have been demonstrated as being comedogenic. Androgens are the main regulators of sebaceous gland activity. There is no neural control of sebaceous glands. Estrogens and progesterones in physiologic amounts do not control sebum production, but high doses of estrogen can decrease sebum production, perhaps by blocking the effect of androgens locally. Synthetic progesterone may be androgenic, accounting for the worsening of acne seen in some women taking certain oral contraceptives. The exact mechanism by which sebum produces comedones is poorly understood.

Corynebacterium acnes, Staphylococci, and Pityrosporum species have been examined for their role in the pathogenesis of acne. It has been thought that the lipases produced by *C. acnes* may break down the glycerides in sebum into free fatty acids and that this latter compound then degrades the lin-

ing of the pilosebaceous follicle, causing rupture. However, this hypothesis is not well supported. Staphylococci and Pityrosporum species currently do not seem to be important in the production of acne.

The pilosebaceous unit is a specialized type of hair follicle located mainly on the face, back, and chest. Comedones, the primary lesions in acne, begin in this follicle. Hyperkeratinization of these follicles has been proposed as a factor in the formation of comedones, and there is ultrastructural evidence to help support this theory.

The diet restrictions given acne patients are based more on anecdotes than scientifically gained information. The best designed studies on diet show little effect on the course of acne.

Tropical climate and sunlight have been implicated as possibly aggravating acne. A particularly virulent type of acne — called Tropical Acne — resolves dramatically when the patient is moved to a more temperate climate.

Diagnosis

The primary lesion seen in acne vulgaris is the comedo. An open comedo is often referred to as a "blackhead" and a closed comedo as a "whitehead." Comedones may be the predominate lesion or may evolve into papules, pustules, nodules, cysts, and draining sinuses. Milia, various benign appendageal tumors, acne rosacea, adenoma sebaceum, folliculitis, pseudofolliculitis, and syphilis may all resemble acne.

Acne-like lesions have been known to be caused by steroids, androgens, bromides, iodides, vitamin B₁₂, antiepileptic drugs, tuberculostatic drugs, lithium, and even tetracycline. Many ingredients in cosmetics have been shown to cause acne or worsen pre-existing acne.

* Assistant Professor of Medicine, Division of Dermatology, University of Kansas School of Medicine, Kansas City, Kansas.
Address reprint requests to Dr. Kestenbaum, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

Treatment

Many topical and systemic agents have been used in the treatment of acne. The efficacy of most agents has not been well demonstrated, because only few well designed studies have been done. The placebo response in the treatment of acne is marked. It was shown over ten years ago that 19-56 per cent of placebo treated patients improved significantly.¹ Among the problems encountered in properly evaluating any new agent is the variability of the acne process in an individual over a period of time, and the problem of measuring improvement.

Some of the most useful agents for treating acne are benzoyl peroxide, benzoyl peroxide-sulfur, tretinoin (Retin-A), and antibiotics (both topical and oral). Intralesional steroids and comedo extraction are helpful adjuncts. Newer agents are also showing promise.

Benzoyl peroxide is now considered a mainstay of topical acne therapy. The usual concentrations are 5 and 10 per cent. Benzoyl peroxide is considered bacteriostatic. It reduces free fatty acids and sebum production, and, in some rabbit ear models, is comedolytic. Up to 2.5 per cent of patients using benzoyl peroxide may develop a contact sensitization. It is now a non-prescription item.

In the mid-1960s, benzoyl peroxide-sulfur creams came into vogue for the treatment of acne. Sulfur has been shown to be bacteriostatic and keratolytic. Either of these properties may account for its beneficial effects, but exact mechanisms are unclear. In a study by Rosenberg,² various concentrations of sulfur and benzoyl peroxide in different vehicles were compared, and it was found that 76-87 per cent of acne patients using benzoyl peroxide-sulfur preparations in Carbowax (polyethylene glycol ointment) achieved good or excellent results. This study also indicated that the composition of the vehicle is significant.

In 1969, Kligman compared topical vitamin A acid to its vehicle, to sulfur-resorcinol, and to benzoyl peroxide-chlorhydroxyquinoline.³ Topical vitamin A was far superior to any of the other topicals in reduction of lesion counts. Topical tretinoin is thought to exert its comedolytic action by decreasing the cohesiveness between cells in the stratum corneum and by accelerating proliferation of cells in the follicular epithelium. It may hasten the resolution of papules and pustules by stimulating blood flow. Although primarily of benefit for acne in which comedones are the main lesions, tretinoin is of some benefit in papulopustular acne. Tretinoin may be very irritating and should be used singly at first. It

may exacerbate acne in the first weeks of therapy. Increased susceptibility to sunburn, hyperpigmentation, and hypopigmentation may result from use of this product. Because of the cutaneous irritation it may cause, tretinoin should be kept away from the eyes, mouth, angle of the nose, and mucous membranes.

A 1974 study testing topical antibiotics for the treatment of acne popularized this mode of therapy;⁴ Frank was particularly impressed with the erythromycin gluceptate in ethyl alcohol (95 per cent) and propylene glycol.⁵ Fischer recommends erythromycin base 750 mg/oz of E-solve and finds the ease of preparation and low incidence of hypersensitivity to be strong points in favor of this preparation.⁶ Acne papules and pustules seem to be more responsive than comedones to topical antibiotics. The best formula for topical erythromycin has not been determined.

Topical tetracycline seems as effective as oral tetracycline, and is now available commercially. Although oral clindamycin is considered dangerous to use in the treatment of acne because of the associated pseudomembranous colitis, topical use of the drug is considered safe and effective. There is evidence that some topical clindamycin is absorbed and three cases of diarrhea were reported with its use.⁷

Topical antibiotics are absorbed; therefore use of tetracycline should be avoided for women who are pregnant or nursing.

Oral antibiotics have been used in the treatment of acne for approximately 25 years. Since acne was thought at one time to be a bacterial infection, antibiotics seemed a logical choice for therapy. The first antibiotics used in the treatment of acne were penicillin and sulfonamides. These were noted to be less effective than broad spectrum antibiotics. Now that infection has been shown to be unimportant in the causes of acne, the mechanism of action of systemic antibiotics is less clear.

Because of the multiplicity of uncontrolled studies using various systemic antibiotics, the Ad Hoc Committee on the use of Antibiotics in Dermatology reviewed the literature and reported on controlled studies testing systemic antibiotics for the treatment of acne.⁸ They found 12 controlled drug trials evaluating the use of tetracycline for acne. Six of these drug trials revealed that tetracycline was significantly better than placebo and six demonstrated no significant difference. This certainly does not lend overwhelming support for the use of tetracycline in acne, yet 10 per cent of the tetracycline produced in the United States is prescribed for the

treatment of acne.⁸ None of these studies showed any significant difference between the various tetracyclines. Lincomycin and sulfadimethoxine showed a very good effectiveness in the treatment of acne but penicillin did not. Data was tabulated comparing the efficacy of systemically administered tetracycline to other antibiotics, rather than to placebos. Erythromycin, clomocycline, sulfadimethoxine, and trimethoprim-sulfamethoxazole were almost as effective as tetracycline, but penicillin was much less effective.

The conclusion of the Ad Hoc Committee was that tetracycline, when given long term in doses of no more than 1 gm/day, was a rational and relatively safe therapy for acne. Erythromycin in the form of its base, ethylsuccinate, and stearate salts, was considered a rational alternative therapy for systemic antibiotic treatment for acne. Lincomycin, clindamycin, and sulfa drugs are not considered to be safe enough at the present time to warrant their long-term use in the treatment of acne. Systemic antibiotics are not effective for the treatment of comedones.

Long-term use of tetracycline in the treatment of acne vulgaris favors the establishment of resistant strains and R factors in the intestinal flora of patients.⁹ This fact may be especially important when one is considering long-term tetracycline treatment in female patients with recurrent urinary tract infections.

Miscellaneous

Intralesional steroids are effective for acne cysts. The usual dose is up to 0.25 cc of a 2.5-5.0 mg per cc solution of triamcinolone per cyst. Comedo extraction is sometimes effective but is probably indicated less often now that we have tretinoin. Comedo extraction is said to be more effective when done on the forehead than on the cheeks.¹⁰

Dihydrotestosterone (DHT) is the most potent androgen end-organ effector in the skin and is increased 2-20 times in acne-bearing skin.¹¹ Local blockers of the action of DHT may offer new and effective therapy in the treatment of acne. Topical antiandrogen creams are still experimental. The antiandrogen creams, delta-1 chlormadinone acetate and cyproterone, have not been especially promising.¹² Oral administration of 17-alpha-methyl-B-nor testosterone, which may act by competing with DHT for a common receptor site in the skin, has shown great promise.¹³

Summary

Acne vulgaris accounts for 20-25 per cent of visits to dermatologists. Sebum, bacteria, and the anatomy of the pilosebaceous unit are probably the main factors in its causes. The roles of diet, stress, and climate are not known.

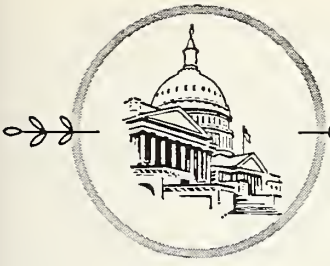
Acne may be caused or exacerbated by various systemic drugs and topicals. Cosmetic facial creams and hair creams are important acneigenic agents. The main topical treatment modalities are benzoyl peroxide, benzoyl peroxide-sulfur, tretinoin, and antibiotics. Systemic tetracycline and erythromycin are considered legitimate and safe treatment modalities although their success is not overwhelming. Local antiandrogen medications may prove especially useful in the treatment of acne but are only experimental at the present time.

Self-Assessment Questions

(One or more answers may be correct.)

1. Sebum production is controlled primarily by
 - a. androgens
 - b. estrogens
 - c. pituitary hormone
 - d. sympathetic nervous system
2. Factors known to worsen acne include:
 - a. chocolate
 - b. sunlight
 - c. some cosmetics
 - d. steroids
3. The two antibiotics found most acceptable in the topical and systemic treatment of acne are:
 - a. tetracycline
 - b. clindamycin
 - c. erythromycin
 - d. sulfa
4. Which of the following drugs have been noted as causes of an acneiform eruption?
 - a. steroids
 - b. iodides
 - c. vitamin B₁₂
 - d. lithium
 - e. penicillin
5. Tretinoin (Retin-A) is primarily used for acne that consists mainly of which type of lesion?
 - a. papules
 - b. cysts
 - c. comedones
 - d. pustules

(Answers on page 308)



Socio- ECONOMICS

Termination of the Physician-Patient Relationship

Ed Note: This is the 13th in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December, 1978 and January, February, and March, 1979.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

THERE ARE MANY reasons why you, as a physician, might wish to end a relationship with a patient. Contrary to what some physicians believe, it is possible to terminate the physician-patient relationship. Here are two cases with commentary that illustrate some of the points you should keep in mind.

Case One

Dr. Bill, a specialist in urology, surgically removed a kidney stone from Mrs. P. A drain was placed in the area of the incision. Ten days after surgery, the exposed portion of the drain tube was clipped off at the skin surface by a resident. Five days later, Dr. Bill discharged Mrs. P. from the hospital and considered his relationship with her to be terminated. For the next six weeks, Mrs. P. experienced pain in her side, persistent draining from the incision, fever, and chills. Dr. Bill did not see her again. In the subsequent malpractice suit, Dr. Bill was held liable for "abandoning" his patient.

Case Two

Dr. Dave, a general surgeon, surgically repaired Mr. C.'s inguinal hernia. For a period of two years, Mr. C. continued to experience low abdominal and genital discomfort. Over this period, he consulted

several physicians, both on Dr. Dave's referral and otherwise. Finally, two years after the initial surgery, Dr. Dave informed Mr. C. that, in his opinion, no medical doctor could help him further and after a specific date, he (Dr. Dave) would no longer treat Mr. C. Subsequently, Mr. C. underwent further surgery which alleviated his pain. He later brought suit against Dr. Dave for "abandoning" him. The court exonerated Dr. Dave of this charge.

The two cases, substantially based on actual court decisions, are quite similar, yet opposite results were reached. Precisely what is your obligation to patients, and how may you properly terminate the physician-patient relationship?

After the physician-patient relationship has begun, you as a physician are legally (and ethically) obliged to attend the case as long as it requires attention, unless you and the patient have specifically agreed otherwise or the patient has dismissed you as his physician.

This does not mean, however, that you remain tied to a patient forever. A physician does have a right to withdraw from a case. But, if you wish to discontinue your services before the need for them is at an end, you must first give due notice to the patient and afford the patient ample opportunity to secure other medical attention of his own choice. This is precisely what Dr. Dave did in the second case presented above.

If you simply cease to provide services, however, without giving the patient such notice and opportunity to procure the services of another physician, you are likely to be held liable for "abandonment." This is the error made by Dr. Bill, in the first case presented above, who assumed that discharge from the case.

If you wish to withdraw from a case, you will want to be certain that you have followed the proper procedure. It is advisable to write a letter to the patient

Form A-1**LETTER OF WITHDRAWAL FROM CASE**

Dear Mr. _____:

I find it necessary to inform you that I am withdrawing from further professional attendance upon you for the reason that you have persisted in refusing to follow my medical advice and treatment. Since your condition requires medical attention, I suggest that you place yourself under the care of another physician without delay. If you so desire, I shall be available to attend you for a reasonable time after you have received this letter, but in no event for more than five days.

This should give you ample time to select a physician of your choice from the many competent practitioners in this city. With your approval, I will make available to this physician your case history and information regarding the diagnosis and treatment which you have received from me.

Very truly yours,

_____, M.D.

Figure 1. Reprinted by permission from *Medicolegal Forms With Legal Analysis*. Copyright 1973 American Medical Association.

explaining the situation, whether or not you have done so verbally. Preferably, the letter would be sent by certified mail, return receipt requested (not registered — the Postal Service advises that registered mail is for items of specific monetary value, such as bonds, stocks, airline tickets, etc.). All correspondence with patients, including letters of this sort, should be duplicated, with a copy retained in the patient's chart. While certified letters and retained copies are not required by law (verbal notice is all that is necessary), such precautions can inexpensively prevent anguish if questions are later raised about the termination of the relationship.

A sample form of a termination letter is reproduced here (*Figure 1*). This form is only a suggestion and may be varied according to your own style and the advice of your local attorney. In this sample, the given reason for termination is failure to follow medical advice. A number of other acceptable reasons may be advanced to justify termination. It is important, however, that you do not assume that the occurrence of any event (such as leaving the hospital, missing an appointment, filing legal action) automatically terminates the relationship. Follow the steps outlined above, if there is any question that the patient might continue to consider you "his doctor."

One final point should be addressed. What constitutes adequate time for the patient to seek other medical attention? No definitive answer is possible because much depends on the circumstances of each

case. Factors to be taken into consideration are the condition of the patient, the size of the community and the availability of other physicians. Perhaps the patient will never seek additional care. The physician is nevertheless obligated to continue to be available to that patient and to help him find other medical attention if he so desires.

In summary, you need not feel bound to a patient whom you do not wish to serve. Such a forced relationship can only be acerbic and not beneficial to either party. You do have an obligation to those with whom you have a relationship, however. This obligation extends at least to clearly notifying the patient that the relationship is at an end.

Pancreatic/Duodenal Trauma*(Continued from page 250)*

6. Stones, H. H.; Stowers, K. B. and Shippey, S. H.: Injuries to the pancreas. *Arch Surg.* 85:525, 1962.
7. Dudrick, S. J. *et al.*: Spontaneous closure of traumatic pancreatic duodenal fistula with total IV nutrition. *J. Trauma* 10:452, 1970.
8. Bradley, E. L. III *et al.*: Spontaneous resolution of pancreatic pseudocyst: Implication for timing of operative interventions. *Am. J. Surg.* 129:23, 1975.
9. Coffey, R. J. and Lee, T. C.: Distal pancreatectomy: The use of polyethylene catheter. *Operative Surgery, Principles and Techniques* (Paul F. Nora, ed.). Philadelphia, Lea & Febiger, p. 593, 1972.
10. Strauch, Gerald O.: Pancreatogastrostomy after blunt traumatic pancreatic transection. *Ann. Surg.* 16:1976, 1972.
11. Sturn, J.: Pattern of injury requiring pancreaticoduodenectomy. *Surg. Gynecol. Obstet.* 137:629-632, 1973.
12. Lima, L. P.: Techniques for reconstruction of the digestive tract after pancreaticoduodenectomy. *Am. J. Surg.* 136:408-409, 1978.
13. Powis, S. T. A. and Young, H. B.: A modified pancreaticoduodenectomy. *Surg. Gynecol. Obstet.* 137:259, 1973.
14. Traverso, L. W. and Longmire, W. P.: Preservation of pylorus in pancreaticoduodenectomy. *Surg. Gynecol. Obstet.* 146:959-962, 1978.
15. Jones, R.: Management of pancreatic trauma. *Ann. Surg.* 187:555-564, 1978.
16. Kerry, R. C. and Glass, W. W.: Traumatic injuries of the pancreas and duodenum. *Arch. Surg.* 85:813, 1962.
17. McKittrick, J. E.: Use of serosal patch in repair of duodenal fistula. *Cal. Med.* 103:433, 1965.
18. Cleveland, A. C. and Waddell, W. R.: Retroperitoneal rupture of duodenum due to non-penetrating trauma. *Surg. Clin. North Am.* 43:413, 1962.
19. Donovan, A. J. and Hagan, W. E.: Traumatic perforation of duodenum. *Am. J. Surg.* 111:341, 1966.
20. Cocke, W. M., Jr., and Meyer, K. K.: Retroperitoneal duodenal rupture. *Am. J. Surg.* 108:834, 1964.

Of all the problems facing professionals who are considering incorporation, perhaps the most unique and difficult ones are faced by the two-man corporation, particularly when one of the partners is significantly older than the other. In this month's column, we will attempt to outline some of the difficulties the professionals in this situation should anticipate and plan for, and some of the methods used to overcome these problems.

Levels of Pension Contribution

Often, when there is a significant difference in the ages of the physicians in a two-man corporation, they will have different objectives as to the amount of income they wish to tax shelter in a retirement plan. The older professional can begin to see retirement years ahead of him, and normally he has raised his family and will have minimum outside liabilities. He is, therefore, concerned with tax sheltering the maximum amount of his current income to plan for his retirement. The younger professional will often be more interested in paying off school debts, buying a new home, raising a young family, and the many expenses that go with these responsibilities.

One method that will allow the older professional to contribute significant amounts to a retirement plan and let the younger professional contribute much smaller amounts is to establish a Defined Benefit Pension Plan. Because of the shorter number of years to retirement for the older professional, the amounts necessary to fund his benefit will be much higher than those needed to fund the benefit for his younger partner. Any difference in amounts contributed for the older physician can then be equalized by paying cash bonuses to the younger partner. This will then balance the income the two partners will take from the practice.

	<i>Partner A (Age 52)</i>	<i>Partner B (Age 31)</i>
Salary	\$40,000	\$40,000
Pension	20,000	7,000
Bonus	5,000	18,000
TOTAL INCOME	\$65,000	\$65,000

Deferred Compensation Agreements

Another method that may be used to defer current income on a tax favorable basis is the Corporate Deferred Compensation Agreement. Under this arrangement, the older professional agrees to defer

current income and allow these monies to accumulate in the corporation until his retirement. Because the corporation will normally be in a 20 per cent tax bracket while the professional is in the 50 per cent bracket, larger amounts can be left to accumulate in the corporation. The physician will draw these monies out after retirement as a supplement to his pension income. Note: Special care should be taken in executing a deferred compensation agreement to avoid incurring an excess accumulations tax and having the corporation declared a personal holding company.

Different Investment Philosophies

Because of the difference in ages of the partners, they will often have differing investment objectives, particularly when it comes to the investment of pension funds. Generally, the older professional is more concerned with security in the accumulation of his retirement monies and will not be inclined to take investment risks that may take many years to be profitable. The younger professional may be inclined to be much more speculative and willing to take longer risks, because he knows he has the years ahead to recover any losses. Great care should be exercised when having the corporation's pension trust drawn to allow the flexibility of individual investment discretion. This will allow the two partners to segregate their investment funds to suit their individual investment philosophies.

Valuing Partnership Interests

The valuing of a partner's interest in a professional corporation may be one of the most difficult problems the corporation will face. This issue can often become most difficult at the time of retirement of the older partner. Extreme caution should be used in establishing a valuation formula when the corporation is established. This valuation formula should be included in a corporate stock redemption agreement executed between the two partners. This agreement should provide for the potential contingencies of termination of the partnership, long term disability of one of the partners, and the death or retirement of a partner.

As can be seen, the problems illustrated above can frequently be solved quite easily. The key ingredient in a successful corporation is proper planning.

The President's Message

This is my first letter to you as president of the oldest corporation in the state of Kansas — the Kansas Medical Society. I want to thank you for your confidence in me. I am humbled by the magnitude of the job that lies ahead during the coming year.

I would like to thank Warren Meyer for the excellent leadership which he gave our Society during the past year. I will be drawing heavily on his advice and support in 1979-80.

The Kansas Medical Society is and will be only as good as you make it. If you drop out, both of us suffer. If you choose not to be active, both of us suffer. If you choose to criticize but do not do so constructively, we all suffer. But if you participate actively, criticize constructively, and are willing to help your elected executive committee and our paid staff, then each year can be a better year and together we can accomplish our goals.

What should those goals be? Certainly the top priority must be good medical care for all Kansans. But how can we best accomplish this? Should we as a medical society be involved in social issues that are not directly related to medicine? Do we stand for something? Or are we only against certain programs?

Your input is important. I would like to have a personal letter from each of you about your concerns, ideas, etc. Your opinions are solicited, your



support requested, your cooperation mandatory — if we are to have a meaningful and successful year.

Fraternally

Donald D. Goring, MD
President



Outlook: Look Out

Mother Nature persists in starting the new year in the spring rather than in the dead of winter as the calendar revisers would have it, probably having come to the realization that the overenthusiasm of the reborn gardener, though it wanes as the temperature increases, is preferable to the post-Saturnalian resolutions, with their half-life of approximately one week, for getting started off. So it is in this spirit of renewal that sundry groups gather to contemplate where they have been and, in particular, where they are going. In this tradition, the Kansas Medical Society has embarked on its 121st season with its annual ceremony of jawboning and human sacrifice in the person of the new president, Don Goering, who is sentenced to the banquet circuit for the coming year.

This recurrent exercise in self-assessment, with its sincere but futile effort to outguess the trends of medical function, has extended to the *Journal* office partly because Dr. Goering, several weeks ago, called upon committee chairmen to contribute thoughts to the Long Range Planning Commission, and partly because it was time for our annual *apologia* to the House of Delegates anyway. First, it brought to mind that our survival has been due primarily to the financial benevolence of the Society, but also that the *Journal* has, predictably, developed along the same philosophic lines as the Society. This, we like to think (personally, that is — we won't incriminate the other members of the Editorial Board unless they choose to come willingly) can be described as a course of enlightened conservatism. The "conservatism" is not to be confused with the politically stereotyped term but denotes rather the literal concept of conserving that which is essential and productive. It is, briefly, the common thread that runs through the whole history of medicine and gives us a continuity with our medical forebears. "Enlightened" introduces a variable qualification but, within our power to assess the times, indicates an adaptability of that essential character to the kaleidoscopic stresses of any given age and provides

the lubrication of progress. Inevitably, then, any planning for the future requires some effort to predict what that future will be and how we shall adapt — or be adapted — to it.

What can be said for the direction and purpose of change for either the *Journal* or the Kansas Medical Society? Involvement with social, economic, and political matters is apparent to all and is established as a permanent feature of medical activity. As medical knowledge increases exponentially, the methodology of medical practice is experiencing convulsions. Physicians bemoan the need to divert their time and energy from patient care to the many impositions thrust on them and their organizations but are moving — not always gracefully — from a position of reaction to one of initiative. While many physicians are not comfortable in their bifid roles, there will be no lessening in the foreseeable future, and the structure and function of medical practice will be the product of the extraprofessional influences as much as the intrinsic advances.

It seems to be an inevitable irony of the democratic system that a government of the people, by the people, and for the people is so frequently in contention *with* the people. And considering the character of these changes, it is inevitable that the government should get into the picture. It takes no great foresight, then, to see that government maneuvers will be a prime factor in our future form, both as a periodical and as a society. For example, our reliance on the Postal Department to deliver the *Journal* to our subscribers makes us subservient to it and establishes one of our financial facts of life. As numerous periodicals have learned, one meets the postal regulations and rates or one ceases to exist. The casualty rate has been high, especially among lay periodicals. So far, when professional periodicals have survived, it has been primarily because they were organs of groups whose members have accepted increasing subscription charges because of their need to sustain their intramural communication

(abettted, of course, by the fact that the cost was deductible). But now the Postal Department has proposed a new rate schedule which undoubtedly will result in the discontinuance of some of these journals. A cynical response would have it that there are too many anyway, but it does seem that survival should be determined by merit rather than bureaucratic economics.

The role of the Postal Department, however, is almost benign compared with some of its bureaucratic siblings. Until recent years, for example, it is doubtful if the average physician gave more than passing thought to the Federal Trade Commission — and vice versa. That was before the FTC decided that physicians were having their way too exclusively in the practice of their profession and needed FTC assistance in rendering service to their patients. It hasn't become clear to physicians just why they shouldn't be the ones to make the decisions regarding their patients or how the FTC is better qualified to determine appropriate professional behavior, but bureaucrats are characterized by an unassailable certainty of their own rectitude. If the federal role seems only annoying or too distant to have much local impact, one may note the increasing frequency of states getting into the act and the progressive elimination of physicians from boards and services of medical nature.

And now the Internal Revenue Service is galloping up on the other flank. It has acted to revoke the tax exempt status of the American Chemical Society and the American Institute of Physics — including publishers of the large majority of the periodicals of these organizations — and it is evident that much scientific communication will be curtailed if not eliminated. No, we haven't received notice of inclusion in this select group, but it would be naive to believe that the IRS is not thinking in terms of extending the process to other scientific and professional structures. As is well known, the IRS has already acted against the AMA in regard to its publication procedures. The threat is a serious one, not only because of its effect on scientific communications but also the implications for extension into other areas of scientific function — financially, if nothing else.

There was a time when it was felt that academic and professional and educational and cultural efforts had a sufficiently desirable purpose in civilizing the world that they should be encouraged by preferential consideration in regard to their financial affairs. After all, they were almost exclusively non-profit activities and the knowledge that the participants and contributors could expect some consideration in re-

turn for their support was a potent stimulus to their activities. But the government takeover of large segments of the benevolence business has displaced much of the voluntary effort and is eroding the philosophy of contribution for the general good. Unfortunately, many of the organizations involved have come to exude an aura of wealth. The bigger and better organized such groups become, the more they have become identified with self-interested affluence. They are assumed to have much more in material and financial resources than is justified. The watchdogs of government, alert to the potentials of extending their own self-interest, are suspicious of such evidence of success and have ample regulations upon which to draw in pursuing their punitive efforts. In the meantime, the "bigness" of the various organizations, the less personal nature fostered by their use of efficient business principles, as well as their vigorous competitive efforts for the voluntary dollar have rendered the public, if not antagonistic, at least disinterested in supporting them against the governmental inroads.

It would be almost comforting to think that these efforts of the government agencies were intentionally conspiratorial because the record of the American people in detecting and rejecting such maneuvers is generally good. But a distressing feature lies in the fact that these groups are performing (in accordance with their own interpretation) their prescribed functions on behalf of that same public with a built-in, tax-supported system for promoting, extending, and defending their actions and thus constitute formidable adversaries for anyone seeking to challenge them. It is depressing to think that such power is guided by bureaucratic tunnel vision. Commendable zeal in performing their assigned duties? Bulwark of democratic government? Guardians of the public's rights? It would seem almost better if their efforts were exercises in venality rather than presumed legitimate performance of duty.

We realize that all individuals and organizations who come under the critical scrutiny of such agencies react with a show of outraged innocence. Recognizing — and discounting — this sense of personal pique, we still find it difficult not to view these actions as positive expressions of governmental attitude as though, having discovered a new lode in the regulatory mine, it was determined to exhaust all the veins regardless of the professional ecology.

Whether our crystal ball is clear or cloudy, we do admit to one possibility that would-be seers are apt to

(Continued on page 312)

KMS Plans Ahead

Long Range Planning Sessions

The following is a summary of a meeting on long range planning which was recently held in Salina. This meeting was the first of its type held in many years and was an attempt to initiate discussions on the direction Society activities should take in the next few years. KMS officers, councilors, specialty society presidents and county society presidents were invited to attend and participate in the meeting. The discussion, comments, and suggestions which came from the meeting will be used by the Council and Executive Committee as guidelines for planning purposes in the next several months.

The long range planning meeting was divided into three major areas of interest: legislative work, administrative affairs of the Society, and work of the commissions and committees. The reports below summarize discussion themes from each subject area.

Legislative

Jimmie A. Gleason, M.D., Topeka OB-Gyn and KMS Legislative Committee Chairman, served as moderator for the session. A full review of current legislative activities with discussion of anticipated issues was undertaken. Included was an update on HMO development throughout the state, which apparently is gaining some momentum as a result of the Governor's interest in developing an HMO in the Topeka area. Warren E. Meyer, M.D., KMS President, indicated that a committee on alternate health delivery systems was to be formed to monitor developments and serve as a resource for county medical societies.

A lengthy discussion followed on the importance of involving physicians in legislative activities. The committee agreed that the Kansas Medical Society should be looking for physicians who are willing to run for the Legislature. Further, that we should actively work with such physicians to help prepare them for responsible and effective roles in the Legislature once elected.

A proposal to hire a full-time public affairs director-lobbyist was thoroughly discussed. Several committee members indicated that the Executive Director should maintain the responsibility of acting as spokesman for the Kansas Medical Society in the Legislature, even if an additional lobbyist is employed. Kermit G. Wedel, M.D., Minneapolis,

Family Practice, and AMA Alternate Delegate, suggested that such a person could have responsibility for coordinating public affairs and information services for the Society. The consensus of the committee was that the Executive Committee should take a further look at hiring a public affairs director-lobbyist, and report its recommendations to the Council at a later date.

The relationship of the Kansas Association of Osteopathic Medicine to the Kansas Medical Society was discussed, with many questions pertaining to the efforts at coordinating legislative work between the two organizations. Many comments suggested that the Kansas Medical Society should explore ways to establish a closer working relationship with the KAOM, especially in legislative affairs. The consensus of the group was that the KMS Executive Committee should initiate discussions with officers of the KAOM, and explore the possibility of joint educational meetings in the future.

An update report on the Kansas Academy of Family Physicians "Doctor of the Day" program was given. Mr. Slaughter indicated that the legislative response to the program was very positive. Several committee members suggested that the program be expanded to include all physicians in the state, not just members of the KAFP. It was also noted that the osteopathic association wanted to participate in the program. Floyd L. Smith, M.D., Colby, Family Practice, indicated that the KAFP intended to continue the program as long as the legislative leadership agreed, and that he would discuss the points raised today with the KAFP.

Also discussed was the issue of federal legislation



Alex Scott, M.D.; Herman W. Hiesterman, M.D.; V. D. Schwartz, M.D.; and Wallace N. Weber, M.D.



William R. Lentz, M.D., and Theodore E. Young, M.D.

and the degree to which KMS participated in contacting our Congressmen. Mr. Slaughter indicated that although KMS did contact the Kansas Congressmen on a variety of issues, it did not represent a comprehensive effort due to lack of available manpower in the KMS office. A suggestion that KMS hire a full-time lobbyist for federal legislation was put aside as being unworkable and too expensive. The consensus of the group suggested that KMS continue to work with AMA lobbyists and supplement their efforts as often as is appropriate.

At the end of the group session, it was suggested that the recommendations of the Long Range Planning Committee, Legislative Section, be sent to the Legislative Committee for its information.

Committee Work

Clair C. Conard, M.D., briefly reviewed the task for the day and laid some ground rules for covering the various committees.

Chronic Respiratory Diseases. It was suggested that there was probably no longer a need for this Committee, that the activities could be carried out via liaison from the KMS office, or an ad hoc committee could be appointed at such time as there is a need.

Insurance Affairs. William R. Lentz, M.D., Chairman, reported on several areas addressed by the Committee and indicated that others to be addressed in the future included group life insurance, one-year disability, annuity, etc. He felt that the Committee should be continued and possibly limited to four or five members. Dr. Lentz suggested that this Committee should not be concerned with Blue Shield.

Blue Shield Relations. It was suggested that this Committee become more active in monitoring of Blue Shield activities.

Locum Tenens. This Committee could probably be discontinued. Any referrals to the Clearinghouse

program could be done directly from the KMS office. Specific issues could be addressed by an ad hoc committee or the Executive Committee.

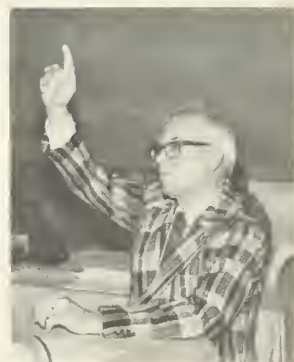
Maternal Health. This Committee should consider the problem of teenage pregnancy and possible educational areas, as well as the issues of midwifery and home deliveries.

Rehabilitation. John W. B. Redford, M.D., Chairman, reported on the Committee's activities and indicated that a new survey is being developed and that possibly a new spinal cord injury plan would be prepared. UKSM is presently working on an educational program. Dr. Redford suggested that the Committee be continued.

Physician Assistants Liaison. This Committee should address the questions of direct supervision, reimbursement problems, and problems of PAs writing prescriptions.

Professional Liability Commission. It was suggested that the California law, requiring lawyers to certify that a case had been investigated and is meritorious, be explored for its application in Kansas.

Continuing Medical Education. It was the consensus of the group that the CME Committee is active and worthwhile and should be continued. It was suggested that the annual scientific session should be maintained but that additional CME sessions should only be addressed if a need was there. It was further suggested that the PSRO may identify problems that could possibly be addressed in such issues. The Committee should monitor the future of relicensure examinations and other mechanisms for verification of CME. There was a concern about the quality of various continuing medical education hours being offered by other organizations. Regarding Category I credit for KMS programs and whether KMS should continue to cosponsor with other organizations, it



Lewis G. Allen, Jr., M.D.



Millard C. Spencer, M.D., and Robert W. Hughes, M.D.

was suggested that the Kansas Medical Society should secure its own accreditation for Category I credit. Another suggestion was that a possible membership assessment should be made to pay for UKSM or another organization for programs.

Commission on Medical Education. Lew W. Purinton, M.D., chairman, briefly reviewed his written comments to Dr. Goering, indicating that the Commission should be disbanded or altered.

Emergency Medical Services. It was indicated that this Committee is important and that it should be continued, as there is a need for physician input in this area.

Health Planning. There is a need for KMS level assistance in the sharing of information among local physicians. It was suggested that the mechanism utilized by the Kansas Hospital Association be explored.

MD-OD. This Committee needs to address the issue of securing a new chairman of ophthalmology at UKSM.

Joint Practice Committee on Nursing. Future implications dictate that this Committee become more active. The membership should be more balanced between the advocates and the opposition.

KaMPAC. There is a need for more state-level support. It was suggested that more contacts should be made with county medical societies, hospital staffs, and non-members. It was suggested that Ronald B. Davis, M.D., Chairman, accompany Dr. Goering on his presidential visits to the Council districts. It was suggested that each county society appoint a KaMPAC representative to work on membership. Physicians should be encouraged to support the local candidates, as well as participate in KaMPAC.

Physician Advertising. This Committee is now in organizational status and should be continued.

Public Affairs. An additional staff person could address some of these issues as well as assist in lobbying activities. A professional public relations firm could be utilized on a consulting basis as needed and could assist in development of various materials. There is a need to promote the Kansas Medical Society image to various members and non-members.

Time did not permit addressing the School Health Committee or the Welfare Advisory Committee.

Administrative

Alex Scott, M.D., Junction City, chaired this section meeting. The following items were considered:

Lobbyist-Public Affairs Director: The consensus was that such a person should be trained in the Executive Office. He/she should develop contacts with the physicians first; the duties of that position would later evolve to include lobbying. This person might also devote time to closer work with the specialty societies.

Ebel Retirement Fund: KMS obligation will cease May 31, 1985. Present funds will run out in March 1982, leaving a deficit of approximately \$32,000. Suggestions included allocating an appropriate amount each year in the budget, beginning 1980, to complete the obligation, or applying the monies received from the IC Systems program, for this purpose.

KANSAS DOCTOR Book. Approximately 1,500 copies of the book are on hand. Because of its historical nature, the value of the book will not diminish with time. Therefore, it was recommended that the original price of \$10/copy be retained. Physicians



John D. Huff, M.D.; Emerson D. Yoder, M.D.; and Alex Scott, M.D.



John C. Mitchell, M.D.

should be encouraged to purchase the book, to use as gifts and PR item. A copy of the book could be presented to each freshman medical student with the compliments of the Kansas Medical Society. The book may be appropriate as required reading in the History of Medicine class at UKSM.

AAMA 1980 Annual Meeting: American Association of Medical Assistants was organized in 1955, with the Kansas Medical Assistants and the Kansas Medical Society as initiators. AAMA now numbers some 20,000 members. They have developed certification in medical specialties and secretarial skills, offer numerous excellent educational programs, and publish a professional magazine. The purpose of the organization is to further the skills of medical assistants in physicians' offices; it is prohibited from becoming a union or a bargaining force.

The 1980 Annual Convention will be held in Kansas City, with Kansas Medical Assistants as hosts, to commemorate the Silver Anniversary of the inception of AAMA.

This section meeting unanimously approves of the resolution to be presented to the House of Delegates, asking that the Kansas Medical Society provide an appropriate speaker at the 1980 AAMA meeting.

KMS Annual Meeting: Attendance has been at about 10 per cent of membership. This situation is not unique to Kansas. KMS will experiment with a new format this year (Friday-Sunday). Also, there will be no commercial exhibits. Instead, to help defray expenses, a modest charge of \$25 will be made for attending the scientific sessions, which carry 6 hrs Category I CME credit.

Suggestions for future meetings included holding a regional meeting with neighboring states; combined meetings with other professionals (attorneys, etc.); scheduling the annual meeting concurrently or closely with all specialty societies.

Unrelated Income: All unrelated net income received is regarded as taxable income by IRS.

Primarily, this is money received from the IC Systems program (collection agency). It has been suggested that this money might be made available to the Ebel Retirement Fund (please see "Ebel Retirement Fund").

KMS Membership: According to By-laws Section 11.43, membership in the Kansas Medical Society is mandatory if the physician elects to join the local component society.

The opinion was unanimous that the By-laws be enforced. The local society should be billed for the unpaid state dues. It is within the power of the Council to revoke the charters of the non-complying local societies.

Signing Checks: There is need for a greater flexibility in signing the Society checks. By-laws Section 7.8 requires that all General Fund checks be signed by the Treasurer and countersigned by the President and Secretary. Because of the geographical distribution of officers, such arrangement is not always practical or workable. A resolution will be introduced to the House of Delegates, asking that the Executive Director be permitted to sign checks with appropriate authorization from the Treasurer.

Working Reserve: Ideally, an organization should have a working reserve of 30-40 per cent of its operating budget. This serves as a buffer in an emergency and allows for smoother operation and better planning of its activities. Such a reserve would not adversely affect the Society's tax exempt status.

It was suggested that \$90,000 be considered as a goal for such a reserve.

AMA Dues: These were compulsory in Kansas in 1963-71. Presently, approximately one half of KMS members are also members in the American Medical Association. Nationally, AMA membership is declining: 50.3 per cent of all physicians were members in 1970; 38 per cent joined in 1977. Without a dramatic increase in membership, AMA's expenses



Kermit G. Wedel, M.D.; Lew W. Purinton, M.D.; and Clair C. Conard, M.D.



Max E. Teare, M.D.; Emerson D. Yoder, M.D.; and Clair C. Conard, M.D.

will exceed income by 1981. Inflation alone will cost the AMA \$4.5 million in 1979.

The members of this group meeting expressed their basic support of the AMA. They suggested sending special mailgrams to non-members, because such physicians receive no information from the KMS or AMA; mailing special items on "What Does the AMA Do for You?" indicating that AMA dues represent but a portion of the savings on professional liability insurance; placing advertisements in *The Journal*, sponsored by AMA members; including AMA dues in the general dues billing form.

Committee Chairmen Expenses: It was the consensus of the meeting that the voluntarism approach be preserved, and the expenses be absorbed by the physician.

A resolution, based on a study of other states' activities in this regard, will be introduced at the House of Delegates, asking that the present method of non-reimbursement of expenses be continued.

WATTS Line: Installation of an incoming WATTS line would cost \$100; plus a monthly charge of \$200/10 hrs. To test the value of this service, it was suggested that the line be installed for the duration of the legislative session. It could also be used for the purposes of the Impaired Physicians Program.

Specialty Societies: It is desirable to unify all branches of medicine. The Kansas Medical Society should provide more assistance to specialty societies. Most specialties in Kansas do not have a base of operation and would welcome the KMS Executive Office for this purpose. Inquiries should be made of Kansas AAFP, to ascertain their interest

in this regard. Also suggested were combined annual meetings (see above, KMS Annual Meeting).

Perhaps the specialty societies would be interested in being included in the KMS legislative activities, and willing to share in lobbying expenses.

CME: The physicians' cost of CME has almost doubled since 1975. Many of the CME courses are currently provided by commercial money-making enterprises. A coordinated effort is needed to identify the quality of the programs. A resolution to this effect will be introduced at the House of Delegates.

There is a need for educational courses for narrow specialties. Federal monies may be available for the development of such programs. A resolution will be introduced at the House of Delegates, asking AMA to study the feasibility of developing continuing education materials tailored to the needs of narrow subspecialties.

Member Recruitment: There is a potential of 300 additional KMS members. Membership recruitment should be addressed more aggressively.

Speakers' Bureau: There is a need for a Speakers' Bureau and better public relations/information programs of the Kansas Medical Society. This would require additional staff. (See above, Lobbyist-Public Affairs Director.)

Mini-Computer: The Society is presently buying time from a data bank. It is suggested that the feasibility of purchasing a mini-computer be explored, especially in view of possible increased services to the specialty societies, direct billing, CME records, Auxiliary roster, etc.

Mediserve, Inc.: Emerson D. Yoder, M.D., Denton, Chairman, suggested that KMS involvement in this program should continue, especially in view of the uncertainty of the current state scholarship program.



Herman W. Hiesterman, M.D.; Warren E. Meyer, M.D.; Robert F. Moore, M.D.; Donald D. Goering, M.D.; and Kermit G. Wedel, M.D.

On other topics, the section membership expressed interest in promoting joint regional efforts with the neighboring state medical societies; strongly endorsed an attempt to elect Kansas physicians to the AMA boards and councils; favored practice management workshops, particularly if these could be scheduled on weekends; and suggested that physicians be encouraged to actively participate in the political process by seeking public offices.

Buy U.S. Savings Bonds

A Kansas community is seeking physicians to care for patients in the following specialties: PEDIATRICS, ORTHOPEDICS, OTOLARYNGOLOGY and OBSTETRICS/GYNECOLOGY. The community's two-year-old hospital serves a population of nearly 80,000 in its immediate and surrounding areas. The medical facility offers excellent surgical, intensive care and diagnostic services to support the work of its physicians. Several colleges and ample recreational facilities complement the working environment. Incentives offered! Reply: Carol Nussbaum, Professional Relations, Humana Inc., P.O. Box 1438, Louisville, Ky. 40201. 502/589-3790

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



Main Bank/3433 E. Central • Wichita, Kansas 67208
Central Two/First and Hillside • Central Northwest/21st and Amidon
All Locations (316) 686-7111
MEMBER FDIC

For hemorrhoids and other anorectal conditions



External hemorrhoids



Internal hemorrhoids



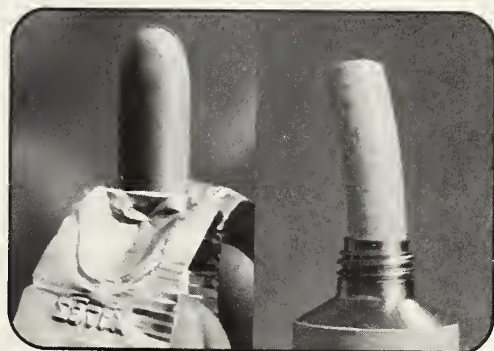
Pruritus ani



Proctitis



Anal fissures



Easy to handle,
easy to insert,
comfortably shaped—
Rx only

Easy to apply,
nonstaining—
Rx only

Prescribe **Anusol-HC[®]** Suppositories/Cream for symptomatic relief

- Effectively reduces inflammation and edema
- Rapidly relieves pain and itching ...

ANUSOL-HC[®] SUPPOSITORIES

Hemorrhoidal Suppositories

ANUSOL-HC[®] CREAM

Rectal Cream with Hydrocortisone Acetate

CAUTION: Federal law prohibits dispensing without prescription.

Description: Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: bismuth subiodide, calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, bismuth subiodide, propylparaben, methylparaben, polysorbate 60 and sorbitan monoesterate in a water-miscible base of mineral oil, glyceryl stearate and water.

Indications: Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas and relief of local pain and discomfort following anorectal surgery.

Anusol-HC Cream is also indicated for pruritus ani. Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol-HC Suppositories or Ointment.

Contraindications: Anusol-HC[®] Suppositories and Anusol-HC[®] Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation.

Warnings: The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts, or for prolonged periods of time.

Precautions: Symptomatic relief should not delay definitive diagnoses or treatment. If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

Anusol-HC is not for ophthalmic use.

Dosage and Administration: Anusol-HC Suppositories—Adults. Remove foil wrapper and insert suppository into the anus. One suppository in the morning

and one at bedtime, for 3 to 6 days or until inflammation subsides. Then maintain patient comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain patient comfort with regular Anusol Ointment.

NOTE: If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

How Supplied: Anusol-HC Suppositories—boxes of 12 (N 0047-0089-12) and 24 (N 0047-0089-24); in silver foil strips with Anusol-HC W/C printed in black.

Anusol-HC Cream—one-ounce tube (N 0047-0090-01); with plastic applicator, detachable label.

Store between 15°-30° C (59°-86° F).

Full information is available on request.



Warner/Chilcott

Division, Warner-Lambert Company
Morris Plains, N.J. 07950

AN-GP-91

The professional source of anorectal comfort

★
Specialized Service
 IN
PROFESSIONAL LIABILITY INSURANCE
is a high mark of distinction

Since 1899

~~1912~~

MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

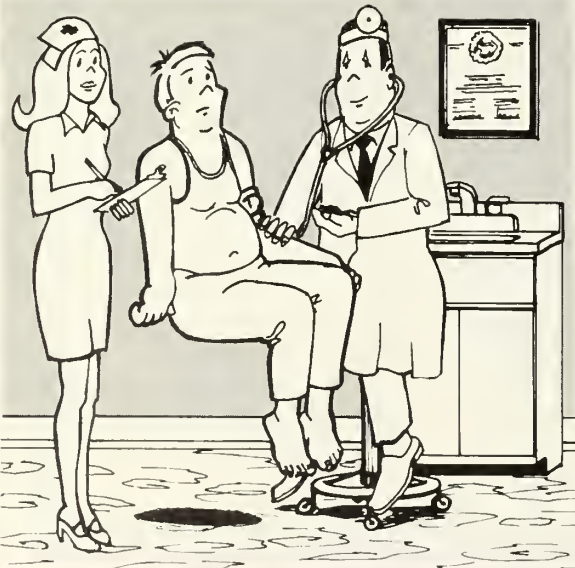
Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222

Something
Missing?



Keeping Patients
Comfortable...

When your patient is most relaxed . . . you are most effective.

Patient comfort, along with your comfort, are prime considerations in this examination table.



Places patients in the positions best for your work, with least discomfort for you.

Whether you are setting up your first office, or are ready to re-equip . . . whether you lease or buy, with time plans available . . . let Goetze-Niemer's helpful professionals work with you.

GOETZE-NIEMER CO.

P.O. Box 136 — 1701 Brooklyn / Kansas City, MO 64141
 Phone: 816-231-1900

HOSPITAL AND SURGICAL SUPPLIES—SINCE 1884



***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; **everything in order — accurately!**

Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215 • (913) 492-8805
P.O. Box 1441, Wichita, Kansas 67201 • (316) 261-5500

*"Let
MAC
do it"*



**Announcing the Opening
of**

HUAMAN PATHOLOGY LABORATORY TOPEKA KANSAS

Antonio Huaman, M.D., Director

Complete services and consultation for Anatomic, Oncologic, Forensic, and Radioisotopic Pathology and Cytology for physicians' offices and hospitals, effective September 1, 1979.

Direct inquiries to:

**Antonio Huaman, M.D.
Continental Medical Building, Suite 5
631 S.W. Horne Street
Topeka, KS 66606**

Council Meeting

Report of Meeting Held April 1, 1979

The Council convened April 1, 1979, at the Salina Hilton Inn, beginning at 10:00 o'clock AM. Dr. Warren E. Meyer, President, presided. Present were Drs. Lewis G. Allen, Kansas City; Franklin G. Bichlmeier, Kansas City; John N. Blank, Hutchinson; Kenneth M. Boese, Manhattan; Clair C. Conard, Dodge City; Jack R. Cooper, Shawnee Mission; Louis M. Culp, Kansas City; Norton L. Francis, Wichita; Herbert Fransen, Newton; Donald D. Goering, Coldwater; Herman W. Hiesterman, Quinter; John D. Huff, Kansas City; Robert W. Hughes, Lawrence; John C. Mitchell, Salina; Robert F. Moore, Caney; Lew W. Purinton, Wichita; Alex Scott, Junction City; Marvin D. Snowbarger, Emporia; Millard C. Spencer, Topeka; William C. Swisher, Wichita; Max E. Teare, Garden City; Wallace N. Weber, Hays; Kermit G. Wedel, Minneapolis; William K. Walker, Sedan; and Emerson D. Yoder, Denton.

Also present were Jerry Slaughter, Gary Caruthers, and Val Braun.

Franklin G. Bichlmeier, M.D., reported on development of the physician discipline committee, the Judicial Committee of KMS. The Committee will consist of four parts: (1) as an access mechanism to the system; (2) evaluation of the merits of the complaint; (3) review and investigation of the complaint; and (4) the report and final action. The Judicial Committee activities will be coordinated with the Impaired Physician Committee. The Committee will consist of seven members of varying specialties. A liaison will be developed with the Legislative Committee and with the Healing Arts Board.

Problems not handled at the local level would go to the Judicial Committee. Sub-groups of three members in each specialty to evaluate problems pertinent to them will be established.

Much work lies ahead, such as needed by-laws changes and the development of contacts around the state. A resolution regarding this project will be introduced to the House of Delegates in May.

The Executive Committee actions to date were reviewed and approved.

Appointments to the Blue Cross Board, to fill the expired terms of Drs. Yulich, Spearman and Grimes, were made. Nominated were Jack D. Walker, M.D., Kansas City; Robert T. McElroy, M.D., Topeka; and Ray E. Allen, M.D., Liberal.

The new format of the Annual Meeting, May 3-6, 1979, in Hutchinson, was reviewed. It is expected that the new weekend format will increase attendance and simplify the business procedures of the meeting.

Mr. Slaughter gave the following legislative report:

Prospective Rate and Budget Review will probably not be considered again this session. It will be reintroduced next session if the hospitals that are not presently under the Blue Cross program do not enter this program.

There was a move to restructure the *Healing Arts Board* by removing two MDs and adding two consumers. This bill was tabled in committee.

The bill that would prohibit physician ownership of *laboratories* has been held over for consideration next year.

A bill extending *Certificate of Need* to physicians' offices has been killed for this year.

Bills for *credentialing* of allied health personnel have been held over to provide for an interim study this summer.

Dr. Meyer briefly reported the results of the Long Range Planning Session held the preceding day, explaining that this was the first attempt at developing goals and objectives for the Society. Three areas were considered: (1) legislation (it was indicated that Society business suffers somewhat during the legislative session and there was general consensus of the group that consideration should be given to employing another staff person to assist in the lobbying activities); (2) Administration (membership recruitment, minicomputer, and other areas were considered); and (3) Committee Activities (suggestions were made to eliminate some committees and to change the direction of some of the others).

Dr. Meyer asked permission of the Council to investigate the possibility of hiring a lobbyist/public affairs director and the possibility of purchasing a minicomputer, with a report to be made to the May Council. These studies were authorized.

Dr. Conard, AMA Delegate, reviewed the three chiropractic suits involving the AMA, explaining the basic differences between them. There was opposition from some of the specialty societies to settling the New Jersey and Pennsylvania suits. Dr. Conard pointed out that the AMA decision to settle these two

suits was based on two basic distinctions: (1) As an individual, the physician has a right to accept referral patients from anyone — that is different from associating professionally; and (2) Chiropractors are already limited licensed practitioners by definition in all 50 states. Additionally, while it is permissible to oppose chiropractic as a cult, it is an infringement on constitutional rights to be against an individual chiropractor in particular.

On the issue of National Health Insurance, Dr. Conard stated that the AMA reversed its earlier position and now has adopted four principles that should be followed if it is necessary to introduce national health insurance.

The Council heard a report concerning the mandatory county and KMS membership provision. County medical societies have been reminded of the by-laws provision that every member at the county level must be a member of the state organization. This provision will be enforced vigorously, by revoking the county's charter if necessary. Suggestions for addressing such instances were made at the Long Range Planning Session and included listing county and KMS dues as one figure, and billing county societies for state dues.

Also reported was the concern about the by-laws provision prohibiting dual state membership. There are physicians on state borders with an interest in belonging to both state medical associations. This issue has been referred to the By-Laws Committee for review and possible introduction of a resolution.

Dr. Spencer reported a concern about some physicians' billing for interest charges and collecting interest on uncollected fees. He voiced a concern about the ethics of the practice, questioning whether KMS should study the issue and if the Kansas Medical Society should change its position from that of the American Medical Association which states:

It is not in the best interest of the public or the profession to charge interest on an unpaid bill or note, or to charge a penalty on fees for professional services not paid within a prescribed period of time, or to charge a patient a flat collection fee if it becomes necessary to refer the account to an agency for collection.

It was the consensus of the meeting that the Society adhere to the policy adopted concerning charging of interest fees, and that if Dr. Spencer is interested

in requesting further study, a resolution to that effect should be introduced. The AMA is currently in the process of revising its Code of Ethics. A suggestion was made that KMS should contact the Board of Healing Arts for a list of various ethical complaints that are received from around the state to get an idea of what is being considered.

Dr. Spencer also reported a concern over the various continuing medical education programs developed by hospitals and possible coordination with UKSM. He felt there was a need to coordinate and keep the leadership role on the state level. Following discussion it was suggested that this matter should be referred to the Continuing Medical Education Committee for consideration.

It was announced that the Kansas Hospital Association had developed a Hospital Record Retention Guide for distribution to its various hospitals. The Medical Society is also considering the development of such a medical record retention guide for distribution to physicians. The initial work has been done and this would be sent to Wayne Stratton for legal review. The Council approved the distribution of such a guide.

A request for 1979 dues, of \$200, in the National Council of State Chairmen of Continuing Medical Education Committees, in which the KMS has been a member for the last two years, was approved. There have been several positive accomplishments by the Council, including changing the date of accreditation to the actual date of the survey, because of previous problems with long delays, and the AMA resolution suggesting that the state medical associations should be the accrediting bodies subject to national guidelines.

It was announced that one Negotiations Seminar has been held in Wichita and appeared to be very successful. Another is scheduled for April 20-21 in Topeka.

Dr. Meyer referred to a letter from the Medical Society of Sedgwick County, indicating that it is considering a possible lawsuit against the Board of Healing Arts in its decision that chiropractors should be allowed to withdraw blood. He indicated that Wayne Stratton will review this matter to determine whether the Kansas Medical Society should become involved in such a suit.

The meeting adjourned at 12:20 PM.

Acne Vulgaris

(Continued from page 290)

Answers

1. a
2. b, c, d
3. a, c
4. a, b, c, d
5. c

References

1. Crounse, R. G.: The response of acne to placebos and antibiotics. *JAMA* 193(11):906-910, 1965.
2. Rosenberg, E. W.: Management of skin problems in the adolescent. *South. Med. J.* 58:1555-1558, 1965.
3. Kligman, A. M. et al.: Topical vitamin A acid in acne vulgaris. *Arch. Dermatol.* 99:469-476, 1969.
4. Fulton, J. E. and Pablo, G.: Topical antibacterial therapy for acne. *Arch. Dermatol.* 110:83-86, 1974.
5. Frank, S. B.: Treatment of acne with topical antibiotics. *Postgrad. Med.* 61(6):92-98, 1977.
6. Fisher, A. A.: Erythromycin "free base" — A nonsensitizing topical antibiotic for infected dermatoses and acne vulgaris. *Cutis* 20(1):17, 26, 30, 35, 1977.
7. Voron, D. A.: "Systemic absorption of topical clindamycin" (letter). *Arch. Dermatol.* 114:798, 1978.
8. Ad Hoc Committee Report: Systemic antibiotics for treatment of acne vulgaris: Efficacy and safety (Review article). *Arch. Dermatol.* 111:1630-1636, 1975.
9. Valtonen, M. V. et al.: The effect of long term tetracycline treatment for acne vulgaris on the occurrence of R-factors in the intestinal flora of man. *Br. J. Dermatol.* 95:311-316, 1976.
10. Lowney, E. D. et al.: Value of comedo extraction in treatment of acne vulgaris. *JAMA* 189:1000-1002, 1964.
11. Price, V. H.: Testosterone metabolism in the skin. *Arch. Dermatol.* 111:1496-1502, 1975.
12. Adams, R. M. and Burdick, K. H.: An antiandrogen delta 1 chlormadinone acetate in acne: Lack of effect topically. *Acta. Dermatovener (Stockholm)* 50:479-480, 1970.
13. Nelson, R. M. and Rakoff, A. E.: Hirsutism and acne treated by an androgen antagonist. *Obstet. Gynecol.* 36:748-752, 1970.

Suggested Readings

1. Fulton, J. E. et al.: Effect of chocolate on acne vulgaris. *JAMA* 210:2071-2074, 1969.
2. Williams, M.; Cunliffe, W. J. and Gould, D.: Pilo-sebaceous duct physiology I: Effect of hydration on Pilo-sebaceous duct orifice. *Br. J. Dermatol.* 90:631-635, 1974.
3. Kligman, A. M. and Mills, O. H.: "Acne Cosmetica." *Arch. Dermatol.* 106:843-850, 1972.
4. Fulton, J. E. et al.: Non-comedogenic cosmetics. *Cutis* 17:344-345, 349-351, 1976.
5. Frank, S. B.: *Acne Vulgaris*. Springfield, Charles C Thomas, 1971.
6. Plewig, G. and Kligman, A. M.: *Acne Morphogenesis and Treatment*. New York, Springer-Verlag, 1975.

Tenuate®
(diethylpropion hydrochloride NF)

Tenuate Dospan®
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines; glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychological dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecostasia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride). One 25 mg tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release. One 75 mg tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSEAGE: Manifestations of acute overdose include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenitoin (Regimine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdose.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell®

References: 1. Citations available on request — Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H. and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

**Whether overweight is a
complicating factor...
or just uncomplicated overweight.**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

Merrell



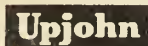
For prescribing information see opposite page.

new
600 mg tablets
Motrin[®]
ibuprofen, Upjohn

More convenient for
some of your patients.

Now there are three
Motrin tablet strengths
to choose from—

600 mg, 400 mg, and 300 mg



The Upjohn Company
Kalamazoo, Michigan 49001, U.S.A.

© 1979 The Upjohn Company

J-6999-4

April 1979

In Edema* or Hypertension* when potassium balance is a concern...

Potassium-Sparing **DYAZIDE®**

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Makes Sense

In Edema

The triamterene in 'Dyazide' limits potassium loss and provides an additive diuretic effect to that of the hydrochlorothiazide component.

In Hypertension

As the hydrochlorothiazide in 'Dyazide' lowers blood pressure, the triamterene component limits potassium loss.

Serum K⁺ and BUN should be checked periodically

particularly in the elderly, diabetics, and those with suspected or confirmed renal insufficiency (see Warnings). If hyperkalemia develops, substitute a thiazide alone.



Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

* WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K⁺ frequently; both can cause K⁺ retention and elevated serum K⁺. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
a SmithKline company

SK&F CO.
Carolina, P.R. 00630



EMPIRIN[®] COMPOUND c CODEINE

Each tablet contains: aspirin, 227 mg; phenacetin, 162 mg; and caffeine, 32 mg; plus codeine phosphate in one of the following strengths: #4—60 mg (gr 1); #3—30 mg (gr ½); #2—15 mg (gr ¼); and #1—7.5 mg (gr ⅛). (Warning—may be habit-forming).



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

VOX DOX

Vox Dox Editor:

In perusing the medical journals, I noted an interesting article in *JAMA*. It details the work that the University of Washington has done in response to the needs of the State of Washington for Primary Care Physicians, "Family Physician Pathway and Medical Student Career Choice." The program has been effective in increasing the proportion of students choosing family practice, general medicine, and pediatrics.

The statistics are not important. The amazing thing to me, a graduate of K.U. Medical School, is that a university actually took the initiative and devised a program that would be responsive to the needs of the people of the state. I had the misfortune of owing my allegiance to a state in which the medical university is not responsive to the needs of the people at all. Having grown up in Western Kansas and now practicing in Phillipsburg, I have been close to this problem for all of my life.

The University of Kansas School of Medicine has not functioned responsibly with the state's money, but has always been an entity of its own, propelled with the fuel of academia and the gas of minutia. Both of these are important — so I've been told — to the advancement of medical science. I feel they can occur together. Research in preventive medicine and in the behavioral fields of primary care, in attitude adjustments and in changing life styles, are all large untapped areas which strong departments of family practice could pursue at any university.

Kansas has had the Murphy Plan which was a concerted effort to get people to practice in rural areas. While in medical school, I conducted a survey of those physicians who went to rural areas to practice during the Murphy Era (1948-1950). About half of those physicians have left. The reasons they left were varied. However the most significant thing I discovered in the survey was that those physicians choosing small town practice and then leaving gave as their reason for practicing there originally the possibility of an immediate income. The people who marked this as their reason for going to a rural area were the ones most likely to leave. Physicians most likely to stay were those who chose a small town merely because they and their spouses enjoyed small town life.

Another study shows that the number of students choosing family practice residencies is related to the strength of the Family Practice Department in the university. K. U. has certainly never been accused

of having a strong Family Practice Department and is attempting to give their residents training by using community hospitals because the "U" is not conducive to learning family practice.

The Wichita State branch, as it was originally called (now I believe it is referred to as the University of Kansas, Wichita) in its original conception provided an opportunity for primary care to be taught and encouraged by primary physicians in a community setting as well as allowing the student to see how primary care physicians interact with specialists on a referral basis. This attitude no longer prevails. There is a larger and larger staff of university professors. There is no longer a chairman of Family Practice. It is difficult for medical students to have a role model for family practice when the university shows its emphasis on family practice by the glaringly vacant spot in its academic position.

At the present time the rural health care problem is being solved by legislation. The legislation in essence provides an elevation of the tuition to costs prohibitive to those of average income, unless you agree to practice in Kansas. Then you receive scholarships or reduction of tuition depending upon your particular agreement with Kansas.

At the present time 161 of the 200 K.U. students have signed up. I don't know the actual number of physicians needed in Kansas, but the University of Kansas compiles a list of requests and now has 300 on that list. I suspect that of these 300 requests many of these practice sites would be unable to support a full time practicing physician. At the present rate of 161 per year, then, only two years will be needed to fill all of the practice locations in Kansas. However, with four years of medical school and three years of residency, these physicians will be unavailable for practice for seven to eight years. And if all of them stay in the small communities, at this rate 320 would be practicing after their residencies with 160 students per class for seven years backlogged behind them. That means there would be 1,120 physicians obligated to Kansas with no place to practice. This may be solved quickly because those physicians having chosen practice in a small community for purely economic reasons usually leave. Therefore, I think we can expect that medical students will complete residencies, practice long enough to fulfill their obligations, and will then be off to the "city life." This relegates rural and small towns to receiving care from physicians who didn't choose to be there initially, don't plan on staying there, and as a consequence, do not have any investment in the community. As a patient, I would have no desire to receive

(Continued on page 312)

The Maker

Examining a Few Myths About Prescribing.

Increasing pressure is being put on the practicing physician to prescribe drugs generically. You are told that brand-name products are universally “expensive” and generic versions are relatively “cheap.” To make this case, the most extreme (rather than typical) price differentials are cited. Thus, consumers are led to believe that such differentials are commonplace. Even your knowledge and your motives as a physician are questioned.

Understandably, these views have created myths. We think it's time to examine them in the light of all the facts and ramifications.



MYTH: There are no differences in quality and performance between brand-name products and their generic counterparts. The corollary is that there are no differences among products made by high-technology, quality-conscious, research-based companies and those made by commodity-type suppliers.

FACT: The Food and Drug Administration does a good job in monitoring a generally excellent drug supply. Still, it has nowhere near the resources to guarantee the quality and bioavailability of all marketed products at any given time. Just a few months ago, for example, it noted that batches of tetracycline HCl capsules which met official monograph requirements were

not bioequivalent to a reference product. As you know, there is substantial literature on this subject affecting many drugs, including such antibiotics as tetracycline and erythromycin. The record of drug recalls and court actions affirms strongly that there are differences among pharmaceutical companies and their products. Research-intensive companies have far better records than those that do not. Research and may practice minimum quality assurance.

MYTH: Industry favors only “expensive” brand names and denigrates generics.

FACT: PMA companies make 90 to 95 percent of the drug supply, including, therefore, most of the generics. Drug nomenclature is not the important point; it's the competence of the manufacturer and the integrity of the product that count.

Matters.

*: Generic options al-
ways exist.*

About 55 percent
prescription drug ex-
penditure is for single-
ingredient drugs. This
figure, of course, that for
about 5 percent of such
expenditure, is a generic
prescribing option avail-

*: Generic
prescriptions are filled with
inexpensive generics, thus
saving consumers large
amounts of money.*

Market data show
that you invariably
prescribe—and pharma-
cists dispense—both
brand and generically
equivalent products from
reputable and trusted
sources, in the best inter-
ests of patients. In most
cases, the patient receives
the same brand product.
Savings from voluntary
generic substitution are grossly
exaggerated.

*MYTH: Drugs account for a
major portion of the rise in
health care costs.*

**FACT: Drugs represent a
very small part of such
costs. The amount of the
health care dollar spent
for prescription drugs
was about 12 cents in
1967; today it is about
8 cents. And you as a
physician are most
conscious of how drug
therapy can cut hos-
pitalization, avert
surgery, reduce office
visits and keep patients
on the job.**

*MYTH: Government intru-
sions into the marketplace
will save tax money.*

**FACT: Government
schemes always cost the
taxpayer something, and
the costs often exceed the
benefits. Certainly, any
federal "help," such as
lists of wholesale drug
prices sent to all physi-
cians and pharmacists,
will be no exception. Just
think of the expense of
keeping them current!
Moreover, wholesale
prices are poor guides to
actual transaction prices
and even worse guides to
retail prices.**

The PMA Position

We believe your freedom to
prescribe, either by generic
or brand name, should be
totally unabridged. Other-
wise, your prescribing pre-
rogatives and your relation-
ships with patients will be
seriously impaired.

The maker does matter

After the myths about price
and equivalency have been
shattered, one fact stands
out more clearly than ever:
The maker does matter. As
always, your best guide to
drug therapy for your pa-
tients is to select
quality products—both brands and
generics—from manufac-
turers with credentials and
performance records you
have come to respect.

The logo for the Pharmaceutical Manufacturers Association (PMA) consists of the letters 'PMA' in a bold, stylized, sans-serif font. The 'P' and 'M' are connected, and the 'A' is separate.

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

INDEX TO ADVERTISERS

Beltone Electronic Corporation	241
Burroughs Wellcome Company	236b, 308d
Capitol Federal Savings & Loan Ass'n	240
Central Bank & Trust	302
Goetze-Niemer Company	304
P. W. Hanicke Manufacturing Company	242
Health Central	242
Huaman Pathology Laboratory	305
Humana Inc.	302
Lattimore-Fink Laboratories	242
Eli Lilly Company	239
Mead Johnson Pharmaceutical Division	236c
Medical Protective Company	304
Merck Sharp & Dohme	238
Merrell-National Laboratories ..	236d, 237, 238, 308, 308a
Mid-America Computing, Inc.	305
Midwest Pension Planners	233
Munns Medical Supply	236
Pharmaceutical Manufacturers Ass'n	310, 311
Roche Laboratories	234, 236a, C3, C4
Shared Service Systems	240
Smith Kline & French	308c
The Upjohn Company	308b
Warner/Chilcott Laboratories	303

Valvular Heart Surgery

(Continued from page 259)

References

1. Ross, J., Jr., and Braunwald, E.: Aortic stenosis. *Circulation* 38, Suppl. 5:61, 1968.
2. Olesen, K. H.: The natural history of 271 patients with mitral stenosis under medical treatment. *Br. Heart J.* 24:349, 1962.
3. Braun, L. O.; Kincaid, O. W. and McGoon, D. C.: Prognosis of aortic valve replacement in relation to the preoperative heart size. *J. Thorac. Cardiovasc. Surg.* 65:381, 1973.
4. Isom, O. W. *et al.*: Factors influencing long-term survival after isolated aortic valve replacement. *Circulation* 50, Suppl 2:154, 1974.
5. Barnhorst, D. A., *et al.*: Long-term followup of isolated replacement of the aortic or mitral valve with the Starr-Edwards prosthesis. *Am. J. Cardiol.* 35:228, 1975.
6. Mullin, E. M., Jr., *et al.*: Current results of operation for mitral stenosis. *Circulation* 46:298, 1972.
7. Conti, V. R. *et al.*: Cold cardioplegia versus hypothermia for myocardial protection. *J. Thorac. Cardiovasc. Surg.* 76:577, 1978.
8. Kay, H. R. *et al.*: Effect of cross-clamp time, temperature, and cardioplegic agents on myocardial function after induced arrest. *J. Thorac. Cardiovasc. Surg.* 76:590, 1978.
9. Barnhorst, D. A. *et al.*: Isolated replacement of the aortic valve with the Starr-Edwards prosthesis. *J. Thorac. Cardiovasc. Surg.* 70:113, 1975.
10. Barnhorst, D. A. *et al.*: Isolated replacement of the mitral valve with the Starr-Edwards prosthesis. *J. Thorac. Cardiovasc. Surg.* 71:230, 1976.
11. Copeland, J. G.; Griep, R. B.; Stinson, E. B. and Shumway, N. E.: Long-term follow-up after isolated aortic valve replacement. *J. Thorac. Cardiovasc. Surg.* 74:875, 1977.
12. Solomon, N. W.; Stinson, E. B.; Griep, R. B. and Shumway, N. E.: Mitral valve replacement: Long-term evaluation of prosthesis-related mortality and morbidity. *Circulation* 56, Suppl. 2:94, 1977.

CLASSIFIED ADVERTISEMENTS

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the *Journal*.

FOR SALE: Soundsciber equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

Mid-America Cancer Center Program seeking Associate Director for Cancer Outreach. Experience in clinical aspects of cancer, education, and community relations. Contact James T. Lowan, M.D., Director, Mid-America Cancer Center, KUMC, 39th & Rainbow, Kansas City, KS 66103.

ASPEN MUSHROOM CONFERENCE. Identification of edible, poisonous and hallucinogenic mushrooms. Treatment of mushroom poisoning. Microscopy. Novice & advanced courses. AMA Category I. July 29-August 3, 1979. Wildwood Inn, Snowmass-At-Aspen, Colorado. Contact Beth Israel Hospital, 1601 Lowell Blvd., Denver, CO 80204. 303-825-2190, ext. 550.

Outlook: Look Out

(Continued from page 296)

ignore in their ominous projections. The conditions we predict, as distressing as they seem to us and as alien as they are to what we think appropriate, may suit our progeny — and their world — just fine so we'll not say whether the outlook is good or bad. But if some reader of the future is looking back through these files to find out what amusing things the old codgers wrote about in these long dead times, we do suggest that he will be enjoying the attention of numerous thriving governmental agencies who regulate what he has and what he does and what he thinks in ways he doesn't even realize. Whether he will have publications such as this available, we can't see too clearly. That crystal ball isn't cloudy, after all — it's them blamed tears. — D.E.G.

Vox Dox

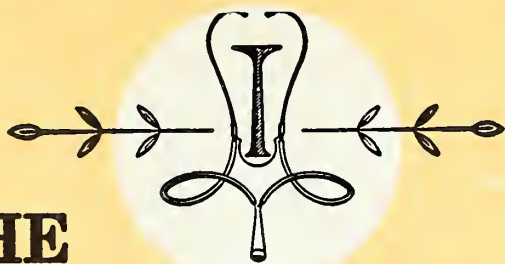
(Continued from page 309)

care from a short term. As a physician in a rural community, I do not look forward to practice with colleagues who are short timers. The medical system in Kansas will constantly be in a state of flux. How much simpler it would have been for the University to have taken the initiative to encourage primary care physicians to make Family Practice an equal partner rather than a weak step-sister. The legislature, in a hurry to please all of its constituents, had not enough patience or perhaps not enough power to work through the usual channels of medical education by supporting wholeheartedly primary care in medical schools or supporting family practice residencies.

Now we are stuck with a hodge-podge of legislation that will provide us with a hodge-podge of a medical system. K.U. and the Kansas Legislature, too much, too late. You blew it again.

DENNIS D. HATCH, M.D.
250 State Street
Phillipsburg, KS 67661

RESOLUTIONS

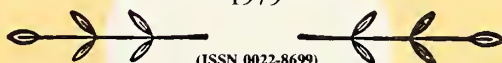


THE
Journal
OF THE
Kansas
Medical
Society

LIBRARY
U.C. SAN FRANCISCO

JUL 12 1979

JUNE
1979



(ISSN 0022-8699)
VOL. LXXX
NO. VI

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for June

Scientific Articles

- Studies in Translocation: Dalkon Shield — Insertion, Perforation, and Migration — Douglas V. Horbelt, M.D., M.A.; Daniel K. Roberts, M.D., Ph.D.; and Harold W. Adamson, M.S.E.E., M.C.T., Wichita 323
- Thoracic Aortography: The Evaluation of Mediastinal Masses — William H. Brooks, M.D., and Kendrick C. Davidson, M.D., Kansas City, Missouri 327
- Brain Tuberculoma: Diagnosis and Treatment — Craig A. Elmetts, M.D.; Daniel R. Hinthorn, M.D.; and Chien Liu, M.D., Kansas City, Kansas 332
- Dependent Compression Mammography: A New Look at an Old Idea — Lawrence Bigongiari, M.D.; Barbara Threatt, M.D.; Jane E. Boyles, R.T.; Christine Comstock, M.D.; Leonard B. Skerker, M.D.; and A. C. Kittleson, M.D., Kansas City, Kansas ... 336
- Elusive Search: Do Viruses Cause Human Cancer? — Richard C. Consigli, Ph.D., and Melvin Center, Ph.D., Kansas State University 341
- PKU and Hypothyroidism: Are We Missing Cases in Kansas? — Patricia T. Schloesser, M.D.; Joseph G. Hollowell, M.D.; Marjorie Petty, M.S.; Sara Bonam, M.S., R.D.; and Helen Kingston Martin, R.N., Topeka 343

Current Comment

- Paget's Disease of Bone — Barbara P. Lukert, M.D., Kansas City . 345

Socio-Economics

- The Medical Office Manual — Your Key to Practice Productivity 349

Miscellaneous

- Advertisers 392
- Auxiliary News 385
- Book Reviews 380
- Classified Advertisements 392
- Cost Containment 340
- Council Meeting 378
- Editorial Comment: *What Price Melancholy?* 352
- Educational Grants 382
- Film Review 326
- Home Health Care 344
- House of Delegates Official Proceedings 359
- Impaired Physician Program Resource List 355
- Information for Authors 348
- Officers-Councilors 386
- Personalities 381
- President's Message 351
- Resolutions 367

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; **Editorial Assistant:** Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

TAKE TIME TO EXPLORE THE OPTIONS

DID YOU KNOW:

1. That by Incorporating your practice you could substantially save tax dollars.
2. **You may not be receiving full benefit from Pension and Profit Sharing/Tax Shelters.**
3. That by having Keogh Plan with higher contribution limits, you can benefit.
4. **You may not be receiving Maximum Tax Savings from Fringe Benefits.**
5. That you can plan more effective ways of reducing your Estate Asset Tax Liability.

CLIP & RETURN

CLIP & RETURN

John:

Yes, I'm concerned about my **tax position** in 1980 and I'd like more information on:

- ☐ Incorporating my practice
- ☐ **Pension and Profit Sharing/Tax Shelters**
- ☐ Keogh Plans — with higher contribution limits
- ☐ **Fringe Benefit Tax Planning**
- ☐ Estate Asset Tax Liability

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



JOHN E. LYONS
MIDWEST PENSION PLANNERS
Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913-235-5305



JOHN E. LYONS
MIDWEST PENSION PLANNERS

PERFORMANCE. PROVEN EFFECTIVENESS WITHIN A WIDE SAFETY MARGIN.



While Roche Laboratories already knows more about the performance of Librium than anyone else, we keep on learning every day.

For example, the highly favorable benefits-to-risk ratio of Librium is a well-documented matter of record.

And, of course, the specific calming action of Librium has been demonstrated in millions of patients around the world. In a large number of these patients, Librium was used concomitantly with other primary medications.

Proven performance within a wide safety margin. Basically, that's what Librium is all about.

LIBRIUM® chlordiazepoxide HCl/Roche THE ANXIETY-SPECIFIC

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states. Efficacy beyond four months not established by systematic clinical studies. Periodic reassessment of therapy recommended.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malforma-

tions as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.



Roche Products Inc.
Manati, Puerto Rico 00701



INCREASE YOUR REVENUES, CUT YOUR EXPENSES, BOOST YOUR EFFICIENCY . . . with

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; everything in order — accurately!

"Let
MAC
do it"



Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215
2300 East Lincoln, Wichita, Kansas 67211

• (913)492-8805
• (316)261-5586

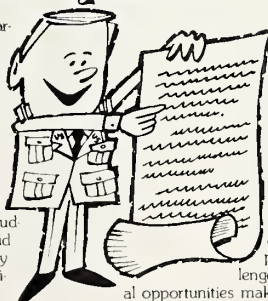
Many physicians are seeking relief from the ever increasing pressures of private practice. If you are a physician, and less than 56 years of age, the United States Air Force Medical Service offers you an alternative and a unique challenge.

The Air Force physician participates in a group practice environment with the entire spectrum of medical specialties available. Air Force Hospitals are accredited and are fully equipped. Health care is provided to every patient without regard for his ability to pay.

Benefits provide a secure and satisfying lifestyle, including 30 days of annual paid vacation, professional pay and recreational opportunities.

Consider the Air Force as an alternative to your present practice. Positions

An open letter to Physicians



are available in primary health care delivery, and a few major medical specialties.

Starting salaries and rank are commensurate with education and experience. Assignment to a specific Air Force Hospital with in the United States or overseas may be arranged.

Consider Air Force Medicine. Excellent pay and benefits, professional challenge and educational opportunities make the Air Force Medical Service a viable alternative to private practice.

al opportunities make the Air Force Medical Service a viable alternative to private practice.

Capt. Don Townner
Citadel Bldg., 1734 E. 63rd St.
Kansas City, Missouri 64113
(816) 926-5424

Air Force. A great way of life.

A Kansas community is seeking physicians to care for patients in the following specialties: PEDIATRICS, ORTHOPEDICS, OTOLARYNGOLOGY and OBSTETRICS/GYNECOLOGY. The community's two-year-old hospital serves a population of nearly 80,000 in its immediate and surrounding areas. The medical facility offers excellent surgical, intensive care and diagnostic services to support the work of its physicians. Several colleges and ample recreational facilities complement the working environment. Incentives offered! Reply: Carol Nussbaum, Professional Relations, Humana Inc., P.O. Box 1438, Louisville, Ky. 40201. 502/589-3790



A simple solution for beating the high cost of feeding babies.

Powdered Soyolac mixed with water (according to directions on the label) is an inexpensive, soy-based infant formula your patients can buy.

Up to 50% less expensive than ready-to-serve formulas.

Up to 25% less expensive than liquid concentrates. Including our own!

Soyolac is the only leading milk-free infant formula available as an inexpensive powder. It provides exactly the same nutritional balance as Soyolac's con-

centrated and ready-to-serve infant soy formulas — a fraction of the cost.

Your patients who use formula will appreciate knowing about it.

For detailed information and samples, please call or write the Soyolac sales representative in your area.

Loma Linda Foods 11503 Pierce Street
Riverside, CA 92515 (714) 785-2475

Loma Linda Foods 13246 Wooster Road
Mount Vernon, OH 43050 (614) 397-7077

Loma Linda

In Edema* or Hypertension* when potassium balance is a concern...

Potassium-Sparing **DYAZIDE**®

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Makes Sense

In Edema

The triamterene in 'Dyazide' limits potassium loss and provides an additive diuretic effect to that of the hydrochlorothiazide component.

In Hypertension

As the hydrochlorothiazide in 'Dyazide' lowers blood pressure, the triamterene component limits potassium loss.

Serum K⁺ and BUN should be checked periodically

particularly in the elderly, diabetics, and those with suspected or confirmed renal insufficiency (see Warnings). If hyperkalemia develops, substitute a thiazide alone.



Before prescribing, see complete prescribing information in SK&F Co. literature or PDR. A brief summary follows:

* WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K⁺ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K⁺ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available.

Precautions: Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Watch for signs of impending coma in severe liver disease. If spironolactone is used concomitantly, determine serum K⁺ frequently; both can cause K⁺ retention and elevated serum K⁺. Two deaths have been reported with such concomitant therapy (in one, recommended dosage was exceeded, in the other serum electrolytes were not properly monitored). Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with thiazides. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effect may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 and 1000 capsules; Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
a SmithKline company

SK&F CO.
Carolina, P.R. 00630

**When painful spasm
is the presenting
symptom...**



in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

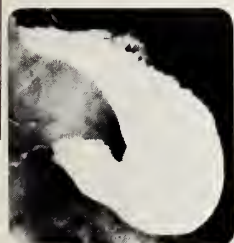
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective.

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (symp).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy), obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient; unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia; nausea; vomiting; impotence; suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSAGE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg capsule and syrup. *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg: *Adults:* 1 tablet three or four times daily. Bentyl Injection: *Adults:* 2 ml. (20 mg) every four to six hours intramuscularly only. **NOTE FOR INTRAVENOUS USE:** **MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanecol chloride USP) should be used.

Product Information as of October, 1978.

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Decatur, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.

Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

ALDOMET[®]

(METHYLDOPA/MSD)

TABLETS: 500 mg, 250 mg, and 125 mg



MSD
MERCK
SHARP
DOHME

Copyright © 1979 by Merck & Co., Inc.

**Announcing the Opening
of
HUAMAN PATHOLOGY
LABORATORY
TOPEKA KANSAS**

Antonio Huaman, M.D., Director

Complete services and consultation for Anatomic, Oncologic, Forensic, and Radioisotopic Pathology and Cytology for physicians' offices and hospitals, effective September 1, 1979.

Direct inquiries to:

Antonio Huaman, M.D.
Continental Medical Building, Suite 5
631 S.W. Horne Street
Topeka, KS 66606

**Something
Missing?**



**Keeping Patients
Comfortable...**



When your patient is most relaxed . . . you are most effective.

Patient comfort, along with your comfort, are prime considerations in this examination table.

Places patients in the positions best for your work, with least discomfort for you.

Whether you are setting up your first office, or are ready to re-equip . . . whether you lease or buy, with time plans available . . . let Goetze-Niemer's helpful professionals work with you.

GOETZE-NIEMER CO.

P.O. Box 136 — 1701 Brooklyn / Kansas City, MO 64141
Phone: 816-231-1900

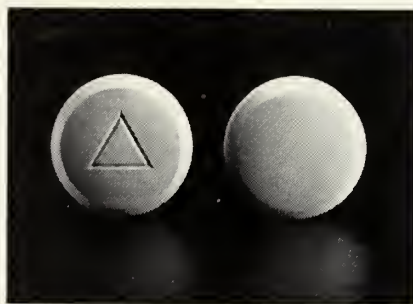
HOSPITAL AND SURGICAL SUPPLIES—SINCE 1884

The Maker

Examining a Few Myths About Prescribing.

Increasing pressure is being put on the practicing physician to prescribe drugs generically. You are told that brand-name products are universally "expensive" and generic versions are relatively "cheap." To make this case, the most extreme (rather than typical) price differentials are cited. Thus, consumers are led to believe that such differentials are commonplace. Even your knowledge and your motives as a physician are questioned.

Understandably, these views have created myths. We think it's time to examine them in the light of all the facts and ramifications.



MYTH: There are no differences in quality and performance between brand-name products and their generic counterparts. The corollary is that there are no differences among products made by high-technology, quality-conscious, research-based companies and those made by commodity-type suppliers.

FACT: The Food and Drug Administration does a good job in monitoring a generally excellent drug supply. Still, it has nowhere near the resources to guarantee the quality and bioavailability of all marketed products at any given time. Just a few months ago, for example, it noted that batches of tetracycline HCl capsules which met official monograph requirements were

not bioequivalent to a reference product. As you know, there is substantial literature on this subject affecting many drugs, including such antibiotics as tetracycline and erythromycin. The record of drug recalls and court actions affirms strongly that there are differences among pharmaceutical companies and their products. Research-intensive companies have far better records than those that do no research and may practice minimum quality assurance.

MYTH: Industry favors only "expensive" brand names and denigrates all generics.

FACT: PMA companies make 90 to 95 percent of the drug supply, including, therefore, most of the generics. Drug nomenclature is not the important point; it's the competence of the manufacturer and the integrity of the product that count.

Matters.

H: Generic options always exist.

F: About 55 percent of prescription drug expenditure is for single-drug products. This is, of course, that for 45 percent of such expenditure, is a generic prescribing option available.

H: Generic prescriptions are filled with expensive generics, thus saving consumers large amounts of money.

F: Market data show that you invariably prescribe—and pharmaceutical companies dispense—both brand and generically equivalent products from the same company and trusted sources, in the best interests of patients. In most cases, the patient receives the same brand product. Savings from voluntary substitution of generic prescribing are grossly exaggerated.

MYTH: Drugs account for a major portion of the rise in health care costs.

FACT: Drugs represent a very small part of such costs. The amount of the health care dollar spent for prescription drugs was about 12 cents in 1967; today it is about 8 cents. And you as a physician are most conscious of how drug therapy can cut hospitalization, avert surgery, reduce office visits and keep patients on the job.

MYTH: Government intrusions into the marketplace will save tax money.

FACT: Government schemes always cost the taxpayer something, and the costs often exceed the benefits. Certainly, any federal “help,” such as lists of wholesale drug prices sent to all physicians and pharmacists, will be no exception. Just think of the expense of keeping them current! Moreover, wholesale prices are poor guides to actual transaction prices and even worse guides to retail prices.

The PMA Position

We believe your freedom to prescribe, either by generic or brand name, should be totally unabridged. Otherwise, your prescribing prerogatives and your relationships with patients will be seriously impaired.

The maker does matter

After the myths about price and equivalency have been shattered, one fact stands out more clearly than ever: *The maker does matter.* As always, your best guide to drug therapy for your patients is to select products—both brands and generics—from manufacturers with credentials and performance records you have come to respect.



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

For hemorrhoids and other anorectal conditions



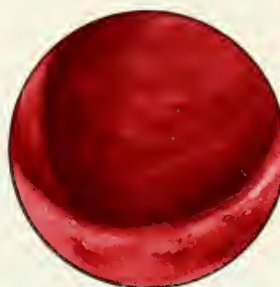
External hemorrhoids



Internal hemorrhoids



Pruritus ani



Proctitis



Anal fissures



Easy to handle,
easy to insert,
comfortably shaped—
Rx only

Easy to apply,
nonstaining—
Rx only

Prescribe **Anusol-HC[®]**

Suppositories/Cream
for symptomatic relief

- Effectively reduces inflammation and edema
- Rapidly relieves pain and itching

ANUSOL-HC[®] SUPPOSITORIES Hemorrhoidal Suppositories

ANUSOL-HC[®] CREAM

Rectal Cream with Hydrocortisone Acetate

CAUTION: Federal law prohibits dispensing without prescription.

Description: Each Anusol-HC Suppository contains hydrocortisone oacetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: bismuth subiodide, calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone oacetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, bismuth subiodide, propylparaben, methylparaben, polysorbate 60 and sorbitan monostearate in a water-miscible base of mineral oil, glyceryl stearate and water.

Indications: Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain and discomfort in external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas and relief of local pain and discomfort following anorectal surgery.

Anusol-HC Cream is also indicated for pruritus ani. Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol-HC Suppositories or Ointment.

Contraindications: Anusol-HC[®] Suppositories and Anusol-HC[®] Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation.

Warnings: The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts, or for prolonged periods of time.

Precautions: Symptomatic relief should not delay definitive diagnosis or treatment. If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Care should be taken when using the corticosteroid hydrocortisone oacetate in children and infants.

Anusol-HC is not for ophthalmic use.

Dosage and Administration: Anusol-HC Suppositories—Adults: Remove foil wrapper and insert suppository into the anus. One suppository in the morning

and one at bedtime, for 3 to 6 days or until inflammation subsides. Then maintain patient comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Then squeeze the tube to deliver medication. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain patient comfort with regular Anusol Ointment.

NOTE: If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

How Supplied: Anusol-HC Suppositories—boxes of 12 (N 0047-0089-12) and 24 (N 0047-0089-24), in silver foil strips with Anusol-HC W. C. printed in black.

Anusol-HC Cream—one-ounce tube (N 0047-0090-01), with plastic applicator, detachable label.

Store between 15°-30° C (59°-86° F).

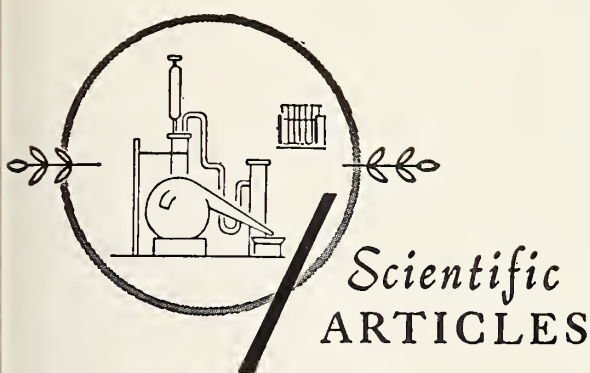
Full information is available on request.



Warner/Chilcott

Division, Warner-Lambert Company
Morris Plains, N.J. 07950

The professional source of anorectal comfort



Studies in Translocation

Dalkon Shield – Insertion, Perforation, and Migration

DOUGLAS V. HORBELT, M.D., M.A.; DANIEL K. ROBERTS, M.D., Ph.D.,
and HAROLD W. ADAMSON, M.S.E.E., M.C.T., Wichita

INTRAUTERINE DEVICES are an effective method of contraception, but there are certain risks in their usage. An infrequent but potentially devastating complication in transmigration.^{1, 2}

When a device is extrauterine, it is present most frequently in the posterior cul-de-sac; however, virtually all intraperitoneal and immediately extraperitoneal locations have been described.^{2, 3} The incidence of transmigration for all IUDs is generally quoted at 1:1000.² The purpose of this paper is to describe and compare the forces necessary to insert the Dalkon Shield and to perforate the uterine wall with the device, and to propose causes other than perforation at insertion for the higher than expected transmigration and contraceptive failure rate seen with this device.^{4, 5}

Materials and Methods

This study included 24 uterine specimens removed for benign processes. No patient was pregnant during the six months prior to hysterectomy.

From the Department of Obstetrics and Gynecology, University of Kansas School of Medicine-Wichita, and Clinical Engineering, Wesley Medical Center, Wichita, Kansas.

Address reprint requests to Dr. Horbelt, Department of Obstetrics and Gynecology, Wesley Medical Center, 550 No. Hillside, Wichita, KS 67214.

The Dalkon Shield is structurally dissimilar from most conventional intrauterine devices. An evaluation of the forces necessary to insert and to perforate the myometrium with both nulliparous and standard Dalkon Shields was performed in vitro on 24 uteri. The difference in pressure of insertion and perforation is statistically significant. Various applicator positions were also evaluated and compared. Possible causes of translocation of this device by means other than perforation are proposed.

The patients were between the ages of 26 and 41 years, and were considered potential candidates for intrauterine devices as a means of contraception. The specimens were subjected to no fixative prior to the perforations which were performed immediately after surgical removal.

Number one chromic suture was used to affix the specimen to the experimental apparatus. Uterine perforation by an IUD applicator was accomplished by an experimental apparatus that pushed the applicator through the uterus and allowed constant monitoring of the force along the axis of the

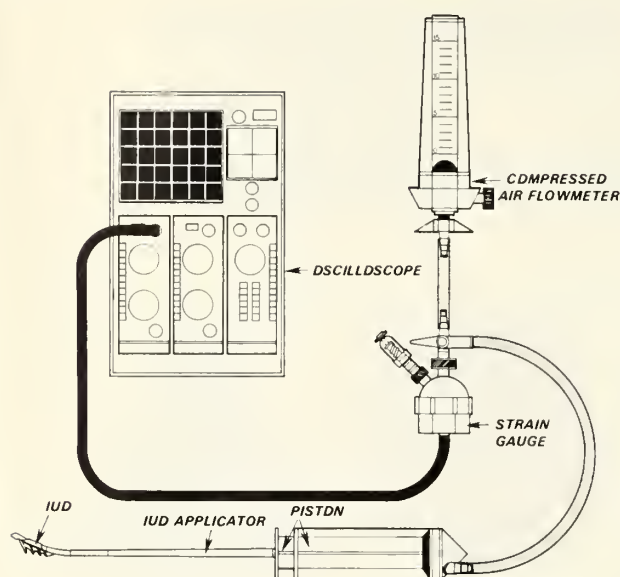


Figure 1. Schematic diagram of the pressure and perforation system.

applicator (Figure 1). The apparatus consisted of a device to hold the specimen and a piston. The applicator and IUD were placed parallel to the piston's axis and the specimen's endocervical canal. The piston was powered by controlled compressed air, while the pressure of the system was measured by means of a Bentley TranTec model 800 strain gauge attached to the piston's inlet. The output of the strain gauge was amplified and displayed on a Tektronix 5103N-D11 oscilloscope. Pressure values were extracted from the oscilloscope tracings. The force of friction (F_f) between the piston wall and piston were considered to be at a minimum.

Each uterus was perforated twice — once in the mid-position and once in the acutely flexed position. Half of the perforations were performed with the applicator of the Dalkon Shield in the anterior position and half were performed in the posterior position. The variation in uterine and applicator positions simulated virtually all anatomically possible situations confronted by the inserting physician. Pressure readings were taken when the Dalkon Shield passed through the cervix, when the tip of the applicator penetrated the myometrial wall, and when the device itself penetrated the wall.

Results

The specimens collected for this study were from individuals who were considered potential candi-

dates for intrauterine devices. The patients' average age was 31.5 years. Their average gravidity was 3.4, average parity 2.8, average abortions 0.5, and average living children 2.7. As a group, the closest to any gestation was six months with an average duration from pregnancy to hysterectomy of 6.7 years. The average uterine specimen weighed 102.8 grams.

The pressure necessary to insert the Dalkon Shield through the cervix was 5.8 lbs. The tip of the IUD applicator required 12.4 lbs of pressure to perforate, and the IUD itself needed 9.9 lbs to pass through the myometrium. If the uterus was acutely flexed, the tip required 13.0 lbs to perforate and the IUD, 10.3 lbs. The nulliparous Shield required 5.6 lbs of pressure at the cervix, 13.7 lbs with perforation of the applicator tip, and 10.4 lbs for the IUD itself. This compared with the multiparous or standard shield which required 6.1 lbs, 12.8 lbs and 9.9 lbs respectively.

The position of the applicator — either anterior (regular) or posterior (inverted) — also varied. The pressure at the cervix was 5.9 lbs for the regular position and 5.8 lbs for the inverted position. The average pressure was 12.6 lbs for perforation of the tip in the regular position and 12.9 lbs in the inverted position. Finally, the actual passage of the IUD required 10.4 lbs of pressure in the regular position and 9.8 lbs in the inverted position.

The above data were subjected to statistical evaluation by comparing the difference of the means using a t-test. A two-sample (two-tailed) t-test using independent samples was used on all means evaluated except the comparison between the mean pressure needed to perforate with the applicator tip and the IUD perforation pressure. These were considered dependent events, and the t-test for dependent samples was employed to evaluate these data. A statistical level of p less than 0.001 was selected as significant. The results of the statistical evaluation are listed in Table 1.

Several observations were made during the course of the experiment. The applicator was marked in centimeters and the knot in the string of the device was 7 cm from applicator tip. The crossbar of the applicator was approximately 9.2 cm from the applicator tip. In our specimens, regardless of the uterine position, the tip of the applicator did not perforate until the knot had completely passed into the endocervical canal. Furthermore, in the mid-position, perforation of the myometrium was not accomplished with the tip of the applicator until both the IUD string and the crossbar were completely within the endocervical canal. In several instances of perforation in the acutely flexed position, the tip did

TABLE I
STATISTICAL EVALUATION

<i>Events and Means Compared</i>	<i>Pounds Pressure</i>	<i>T-Value</i>	<i>Degrees of Freedom</i>	<i>Probability</i>
Applicator tip perforation versus Cervical insertion pressure	12.40 5.85	6.36	41	.0001
Applicator tip perforation versus IUD perforation	12.40 9.94	7.19	23	.0001
Applicator tip perforation, uterus — mid-position versus Applicator tip perforation, uterus — flexed position	12.40 13.04	0.154	38	.80
Standard IUD, cervical insertion versus Nulliparous IUD, cervical insertion	6.05 5.57	0.89	22	.40
Standard IUD, perforation versus Nulliparous IUD, perforation	9.95 10.37	0.38	22	.70
Cervical insertion pressure, applicator — regular position versus Cervical insertion pressure, applicator — inverted position	5.86 5.84	0.03	22	.90
Applicator tip perforation applicator — regular position versus Applicator tip perforation applicator — inverted position	12.61 12.86	0.203	38	.80

perforate before the crossbar entered the cervix. In only two instances of more than 70 perforations was the applicator unable to penetrate the myometrial wall, and both of these specimens were excluded from this study.

Discussion

In women who are potential IUD users and who have no myometrial abnormalities, significantly more pressure is required to perforate the uterus with a Dalkon Shield applicator than is required to insert the Shield through the endocervical canal. The applicator, likewise, requires significantly more force to perforate than the Shield itself when the events are considered in a dependent series. The amount of force used to perforate the myometrium is not dependent on the position of the uterus. The size of the Shield does not account for a significant amount of variation in the pressure necessary to insert the IUD through the endocervical canal, and

the pressure required to perforate is not related to the position of the applicator. It appears that perforation of the uterus is dependent on the structural configuration of the applicator and not the various anatomical positions that were tested.

The literature is conflicting as to the causes of extrauterine placement of an IUD. Some authors contend that perforation or partial perforation at insertion is the only mechanism associated with extrauterine placement.^{6, 7} Others contend that the most usual method is perforation at insertion; however, post-insertion migratory displacement can occur.^{1, 2, 8, 9} The mechanism for this is a combination of pressure necrosis and uterine contractions, enhanced perhaps by loss of some integrity of the myometrium due to infection or a traumatic defect.^{1, 2} The process of embedding has been previously described and may represent the intermediate event in spontaneous transmigration.¹

Observations made during this investigation sup-

port causes other than perforation at the time of insertion to explain the presence of an intra-abdominal device. This study has shown that it requires more than twice as much pressure to perforate the myometrium as to pass the device through the endocervical canal. After insertion the presence of the knot at the external os and the presence of the crossbar outside the cervix support intrauterine placement. Since contraceptive effect of the extrauterine IUD is negligible, the first sign of a previously unrecognized perforation is often pregnancy.^{10, 11} The Dalkon Shield is unique among IUDs in that its relative failure rate progressively increases with length of usage. This suggests "walling off," implantation or migration as a cause. The design of the instrument for insertion may also contribute to transmigration.

The initial traumatic feature that may allow an increased incidence of implantation or transmigration could easily be attributed to the structure of the applicator. The tip of the applicator extends past the IUD and its structure is rigid. In virtually all instances of perforation during these experiments, the applicator tip had to penetrate the myometrium prior to passage of the IUD. These features are presented as evidence to support the concept that not all intra-abdominal IUDs are iatrogenically placed at insertion.

References

1. Weeks, L. P.: Complications of intrauterine contraceptive devices. *J. Natl. Med. Assoc.* 67:1-10, 1975.
2. Ledger, W. J. and Willson, J. R.: Intrauterine contraceptive devices: The recognition and management of uterine perforations. *Obstet. Gynecol.* 28:801-811, 1966.
3. Cederqvist, L. L.; Saary, A. I. and Zervoudakis, I. A.: Translocation of the Dalkon Shield into the broad ligament. *Obstet. Gynecol.* 46:239-242, 1975.
4. Ma, H. K.; Wei, M. and Luk, K. F.: The Hong Kong experience in the use of the Dalkon Shield. *Contraception* 10:113-124, 1974.
5. Perlmutter, J. F.: Experience with the Dalkon Shield as a contraceptive device. *Obstet. Gynecol.* 43:443-446, 1974.
6. Povey, W. G. and Silverman, B.: Uterine perforation by intrauterine contraceptive devices: Diagnosis and treatment. *J. Reprod. Med.* 6:91-92, 1971.
7. Ostergard, D. R.: The Dalkon Shield intrauterine device: A review of current status. *J. Reprod. Med.* 14:64-67, 1975.
8. Ansari, A. H.: Diagnosis and management of intrauterine device with missing tail. *Obstet. Gynecol.* 44:727-734, 1974.
9. MacKay, D. H. W. and Mowat, J.: Translocation of intrauterine contraceptive devices. *Lancet* 652-653, 1974.
10. Goldstein, A. I. and Ackerman, E. S.: Intrauterine device in the broad ligament. *JAMA* 221:508, 1972.
11. Burnhill, M. S. and Birnberg, C. H.: Uterine perforation with intrauterine contraceptive devices. *Am. J. Obstet. Gynecol.* 6:135-140, 1967.

Film Review

HYPOCHONDRIACS AND HEALTH CARE: A Tug of War, produced by Workshop Films in cooperation with Robert R. Rynearson, M.D., Chairman, Department of Psychiatry Scott and White Hospital, Temple, Texas. 38 minutes, color, 16 mm, 1978.

The Editorial Board of this *Journal* has been asked to review a film entitled "Hypochondriasis and Health Care: A Tug of War" to decide whether it should be recommended for viewing by physicians. The Board agrees that this is an excellent film, well prepared and well presented by Dr. Rynearson, a psychiatrist from the Scott and White Clinic in Temple, Texas.

The main purpose of the film is to illustrate the differences in purpose (Tug of War) between the physician and his patients. That is, the physician's purpose is to cure any disease and solve any problem presented to him, in opposition to the patient's desire to cling to his symptoms, the one thing that makes him feel important.

Dr. Rynearson's appeal to physicians, nurses, and others who may be involved is to temper their approach to these patients — who already have adopted a life style of illness — and to protect them from the constant merry-go-round of medication, testing, surgery, or indeed psychotherapy.

The Editorial Board believes this film is well worth showing at county medical society meetings, in postgraduate seminars, nurses schools, and to other persons responsible for the care of patients. It is qualified for Category I credit. — R.H.G.

Available from: Workshop Films, 4 Longfellow Road, Cambridge, MA 02138, 617-492-6134. Rental — \$40; Sale — \$400; Video — \$350.

CORRECTION

The paper, "Partial Splenectomy," published in the May issue of the *Journal*, was incorrectly noted as having been presented at the 1978 annual meeting of Kansas Chapter, American College of Surgeons. This paper should have been reserved for publication in another issue of the *Journal*.

The paper on splenic injuries presented at the ACS meeting by David R. Stewart, M.D., will be published in a future issue of the *Journal*.

Thoracic Aortography

The Evaluation of Mediastinal Masses

WILLIAM H. BROOKS, M.D., and KENDRICK C. DAVIDSON, M.D.,
Kansas City, Missouri

MEDIASTINAL MASS presents a long list of possibilities for differential diagnosis. The thoracic aorta passes through each of the mediastinal compartments so that lesions of the aorta must be included in the differential diagnosis of mass lesions in each of these mediastinal regions. A number of non-aortic mediastinal masses can be located contiguous to the aorta, and the "silhouette" sign makes separation of the aorta and mediastinal mass impossible in many cases utilizing x-ray film and tomographic techniques.¹⁻³

Other noninvasive techniques — such as static and dynamic radionuclide procedures — may serve to demonstrate the solid or vascular nature of these mediastinal masses. Yet in many cases, thoracic aortography is required to provide diagnosis and specific anatomical information necessary for the proper care of the patient, especially when an aneurysm is demonstrated. The following cases illustrate some of these assertions.

Case One: Four weeks prior to admission to this hospital, a 79-year-old female was hospitalized with fever, respiratory difficulty, and speech abnormality. The clinical diagnosis was congestive heart failure with a cerebrovascular accident. During that admission, *Staphylococcus aureus* was cultured from the blood on three occasions. Hemoglobin, on admission and five days later, was 12.8 gm/100 ml; but on the 17th hospital day, was 8.8 gm/100 ml. Upon transfer to this hospital nine days later, hemoglobin was 9.0 gm/100 ml. Chest x-ray on first hospitalization showed evidence of some heart enlargement but no other major change (*Figure 1*). Further chest x-rays showed progressive enlargement of the left hilum. At that time, a diagnosis of

Numerous conditions can give rise to masses in the mediastinum. Those lesions lying adjacent to the thoracic aorta may arise from the aorta or may be due to other diverse pathology. Attention is directed toward the role of thoracic aortography in the evaluation of para-aortic masses in the thorax.

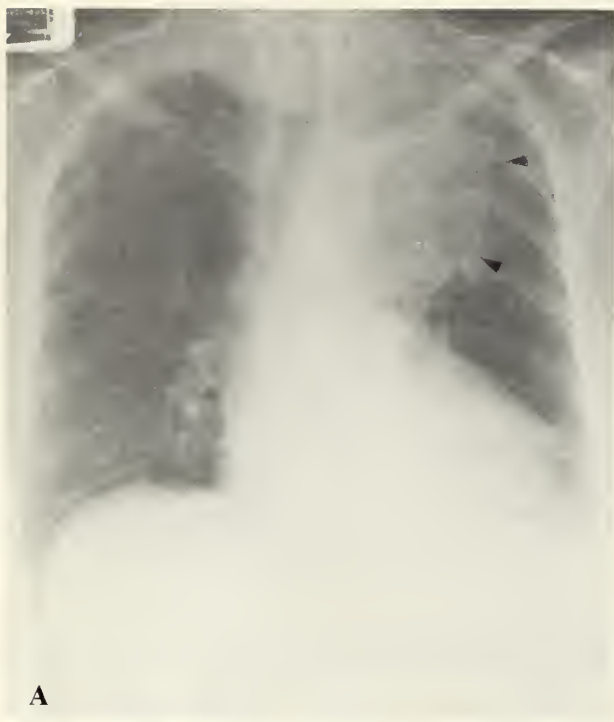
perihilar pneumonitis with possible left upper lobe atelectasis was made. The hilum continued to enlarge, and the patient was transferred to this hospital where chest x-rays and tomograms showed an irregular, ill-defined mediastinal mass adjacent to the aortic arch (*Figures 2A, 2B, and 3*). Aortography demonstrated a saccular collection of contrast material 4 cm in diameter which was continuous with the posterolateral aspect of the aorta distal to the left subclavian artery (*Figure 4*). There was no evidence of aortic dissection. This was thought to represent a



Figure 1. PA chest film three days after first hospital admission showed some evidence of left heart enlargement.

From St. Luke's Hospital Department of Radiology and St. Luke's Foundation for Education and Research, Kansas City, Missouri.

Address reprint requests to Dr. Brooks, Department of Radiology, St. Luke's Hospital, Wornall Road at 44th, Kansas City, MO 64111.



Figures 2A, 2B. PA (Figure 2A) and lateral (Figure 2B) chest films at time of transfer to this hospital demonstrate a large left hilar-perihilar mass which appears extended from the mediastinum (arrows).

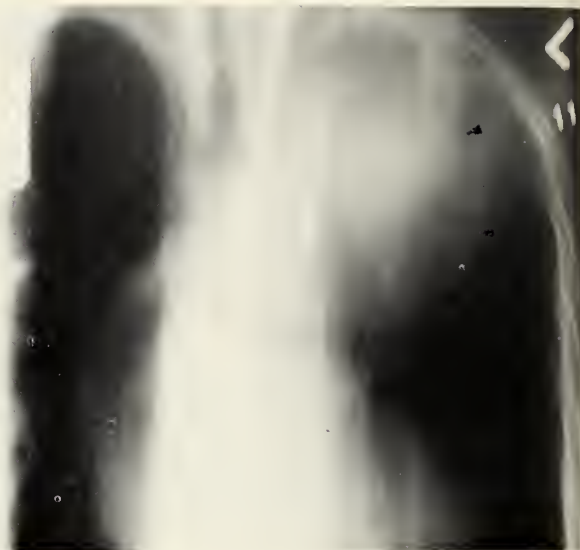


Figure 3. Frontal tomographic film on same day shows no distinction between transverse portion of thoracic aorta (curvilinear calcification) and the mass whose lateral border is outlined by arrows.



Figure 4. Thoracic aortography (subtraction print) in right posterior oblique projection on the same date shows contrast collection in saccular contour typical of aneurysm or pseudoaneurysm.

pseudoaneurysm with surrounding hematoma extending into the left chest. The patient was taken promptly to surgery, but expired enroute. Possible mycotic cause of the aneurysm was not resolved because no postmortem examination was allowed.

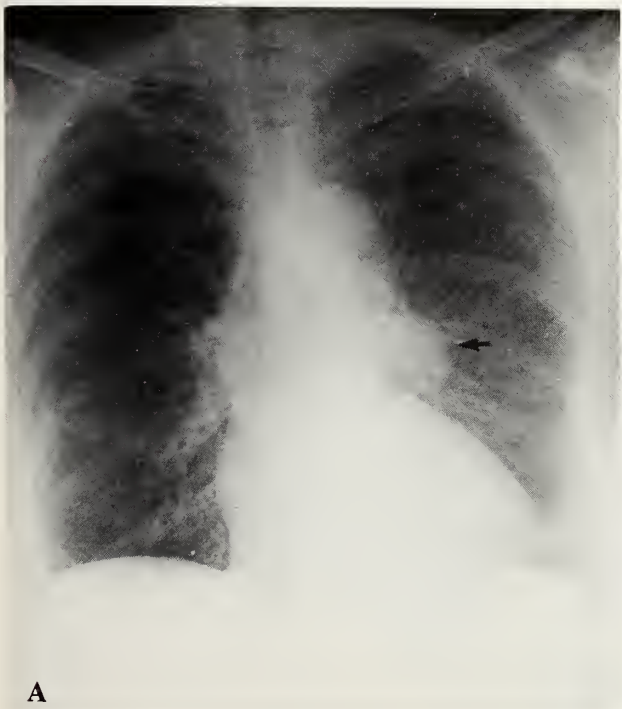
Case Two: A 68-year-old female presented with a history of pleural effusion. Resolution of the effusion revealed a mass in the posteromedial portion of the left chest (*Figures 5A, 5B*). She was surgically explored at another hospital without further evaluation of the mass, and an aneurysm involving the descending aorta was discovered at surgery. The aortogram during the second hospitalization demonstrated two fusiform aneurysms in the descending thoracic aorta (*Figure 6*). One was located in the mid descending portion of the thoracic aorta, and a larger one was situated at the thoraco-abdominal junction. These were surgically repaired and the patient's postoperative course was uneventful.

Case Three: A 74-year-old female with a two-week history of upper respiratory infection presented with cervical, axillary and inguinal adenopathy, a breast mass, and a left upper quadrant mass. She had experienced a 20-lb weight loss during the previous

year. There was also an anterior mediastinal mass that could not be separated from the ascending aorta and was thought possibly to be an aneurysm (*Figure 7A, 7B*). Isotope 99m Technetium bolus angiography was performed but was not helpful. Arch aortography revealed a mass indenting an otherwise normal-appearing thoracic aorta (*Figure 8*). The lesion was hypovascular, but several small vessels were seen to be draped and stretched about the mass and a faint tumor blush was demonstrated by subtraction technique. A large cell lymphoma was subsequently diagnosed at surgery.

Discussion

Each of these cases demonstrates the difficulties of distinguishing various mediastinal masses from aortic aneurysms when lesions are in continuity with the aorta. Even a clot-filled aneurysm may occasionally appear as a solid tumor. However, narrowing or widening of the aortic lumen, faint extraluminal



A

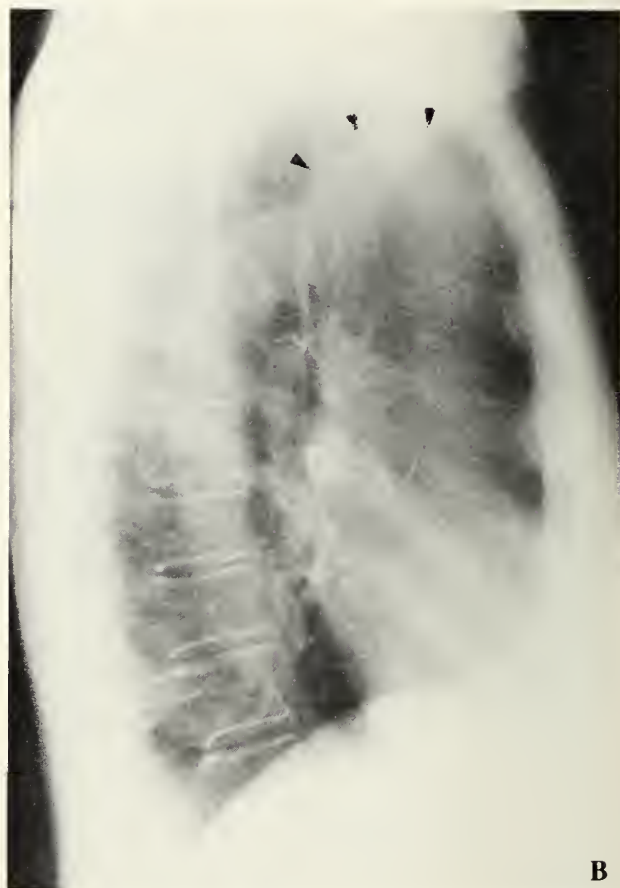
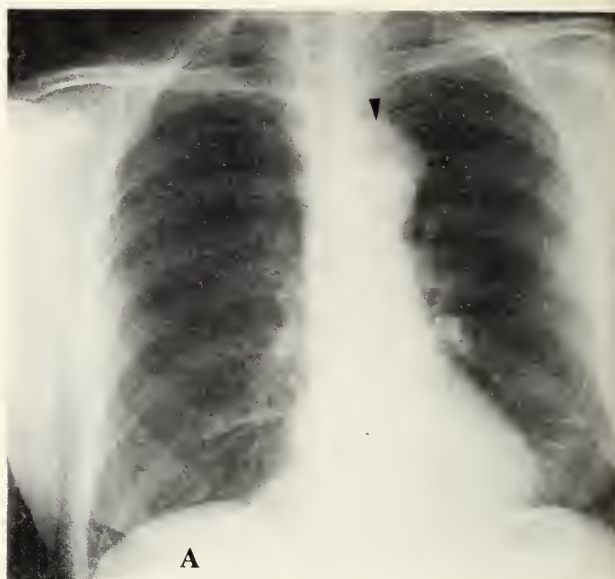
Figures 5A, 5B. Following resolution of left pleural effusion (*Figure 5A*), a mass (single arrow) is noted lateral to left hilum. Lateral chest film (*Figure 5B*) shows this mass lies behind the hilum contiguous to descending thoracic aorta (two arrows).



B



Figure 6. Thoracic aortogram (subtraction print) demonstrates that the mass is a mid-thoracic aneurysm (arrowhead). There was an unsuspected thoraco-abdominal aneurysm present also (two small arrows).



Figures 7A, 7B. PA (Figure 7A) and left lateral (Figure 7B) chest films show the mass outlined by arrowheads above the proximal transverse portion of the thoracic aorta.



Figure 8. Thoracic aortogram (subtraction print) shows branches arising from the internal mammary artery and adjacent vessels serving the tumor and causing a tumor blush pattern (arrowheads).

collections of injected contrast material, and failure to opacify adjacent intracostal arteries are features seen with aneurysms but not with tumors.¹⁻⁴ Occasionally, as in *Case Three*, a neoplasm may demonstrate neovascularity with or without a tumor blush. In appropriate settings, radionuclide scans using Gallium 67, for example, may be helpful in identifying mediastinal tumors arising from bronchogenic carcinomas or lymphomas.⁵

Preoperative aortography not only establishes the presence of an aneurysm but defines its extent and demonstrates the regional vascular anatomy — information vital for preoperative evaluation. Furthermore, the presence of an unsuspected abdominal aneurysm, such as in *Case Three*, will be found in approximately 25 per cent of patients presenting with thoracic aortic aneurysms.² Although ultrasound and radionuclide studies of the thoracic aorta have not consistently given detailed information, recent liter-

ature suggests that enhanced computed tomographic imaging of the thorax will prove to be of great value in distinguishing vascular structures — such as thoracic aortic aneurysms — from solid masses.⁶ This technique may prove to be an important preliminary examination in the evaluation of mediastinal masses.

References

1. Felson, B.: *Chest Roentgenology*. Philadelphia, Saunders, pp. 28-38, 1973.
2. Spraygen, S. and Jacobson, H. G.: Angiographic differentiation of thoracic aneurysms and neoplasms. *Vasc. Surg.* 10:200-213, 1976.
3. Higgins, C. B., et al.: Localized aneurysms of the descending thoracic aorta. *Clin. Radiol.* 26:475-482, 1975.
4. Itzhak, Y., et al.: Dissecting aneurysms of the thoracic aorta: Reappraisal of radiologic diagnosis. *Am. J. Radiol.* 125:559-570, 1975.
5. Alderson, P. O. and Gottschalk, A.: *Diagnostic Nuclear Medicine*. Baltimore, Williams and Wilkins, pp. 537-549, 1976.
6. Goldwin, R. L.; Heitzman, E. R. and Proto, A. V.: Computed tomography of the mediastinum. *Radiology* 124:235-241, 1977.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612

Brain Tuberculoma

Diagnosis and Treatment

CRAIG A. ELMETS, M.D.; DANIEL R. HINTHORN, M.D.; and
CHIEN LIU, M.D., *Kansas City, Kansas*

PULMONARY TUBERCULOSIS has steadily declined since 1910, but the incidence of extrapulmonary tuberculosis has remained constant, accounting for approximately 10 per cent of new active cases.¹

Although intracranial tuberculoma is still commonly recognized in India^{2,3} and South America,⁴ this lesion has been considered rare in the United States. In Great Britain, between 1951 and 1972, intracranial tuberculoma accounted for only 0.15 per cent of admissions to a neurosurgical hospital.⁵ However, the incidence may be increasing in Great Britain due to the Asian immigrant population.⁶ Likewise, in the United States, there has recently been an increasing number of reports of intracranial tuberculoma.⁷⁻⁹ Current recognition may be enhanced by the use of brain scan and computerized axial tomography (CAT) scan. Following are reports of three patients with intracranial tuberculoma seen during a six-year period at the University of Kansas School of Medicine in which these newer techniques were useful in demonstrating tuberculoma of the brain.

Case Reports

Case One: A 35-year-old white male entered UKSM with a two-month history of malaise, night sweats, cough, and a 45-lb weight loss. He had developed a left facial paralysis and poor coordination of the left hand two weeks prior to admission. He denied experiencing headache or stiff neck. A chest roentgenogram on this patient five years prior to admission had appeared abnormal; however, sputum cultures were negative for *M. tuberculosis* at that time.

Physical examination revealed a chronically ill-appearing male. Temperature was 38.9°C. His neck was supple; the lungs were clear. Neurologic examination showed loss of muscular function in the lower left face consistent with a central lesion of the

seventh cranial nerve. He also exhibited a left hemiparesis, normal sensory responses, and normal plantar responses.

Laboratory examination revealed: hemoglobin, 15.1 gm/100 ml; hematocrit, 47.1%; and leukocyte count, 10,300/cu mm. There was 10 mm induration

Intracranial tuberculoma should be a diagnostic consideration in patients with chronic meningitis or an intracranial mass lesion. Although brain scan and CAT scan do not differentiate between mass lesion caused by tuberculosis, fungi or neoplasms, in certain clinical settings use of these newer diagnostic modalities may obviate craniotomy. We discuss clinical settings in which antituberculous therapy may be used without prior brain biopsy confirmation.

48 hours after intradermal inoculation of intermediate tuberculin skin test (5 TU). Chest roentgenogram showed extensive fibro-nodular densities and multiple small cavities in both apices consistent with advanced tuberculosis. The sputum smear showed many acid-fast bacilli, and *M. tuberculosis* was subsequently isolated.

Lumbar puncture revealed an opening pressure of 310 mm H₂O with 0 red blood cells, (RBC), and white blood cells (WBC), 390/cu mm; 95% were polymorphonuclears and 5% mononuclears (*Table I*). Cerebrospinal fluid glucose was 43 mg/dl; blood glucose, 104 mg/dl; and cerebrospinal fluid protein, 82 mg/dl. Cultures of the cerebrospinal fluid were negative.

Skull films revealed a 2 mm shift (within normal range) of the pineal body to the left (*Table II*). A 3 x 6 cm irregular lesion was demonstrated in the right posterior frontal area on the technetium brain scan. Electroencephalogram showed focal slow wave activity in the same region. Diagnostic considerations were pulmonary tuberculosis, tuberculosis meningitis, and cerebral tuberculoma. Isoniazid (INH), 600 mg/day; PAS-C, 9 gm/day; and streptomycin, 2

From the Division of Infectious Diseases, Department of Internal Medicine, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Hinthorn, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

TABLE I
LABORATORY FINDINGS IN PATIENTS WITH INTRACRANIAL TUBERCULOMAS

Case	Date	Opening Pressure (mm H ₂ O)	CSF Protein (mg/dl)	CSF Glucose (mg/dl)	CSF Cell Count (/mm ³)	Differential	CSF Culture	Brain Culture
1	3-23-70	310	82	43	0 RBC 390 WBC	95% PMN 5% Mono	Negative	Not Done
	4-8-70	95	78	47	0 RBC 21 WBC	2% PMN 98% Mono		
2	5-12-75	300	93	33	82 RBC 30 WBC	85% PMN 15% Mono	<i>M. Tuberculosis</i>	<i>M. Tuberculosis</i>
	5-24-75	240	108	17	19 RBC 360 WBC	18% PMN 82% Mono		
3	1-22-76						Not done	<i>M. tuberculosis</i>

gm/day, were administered. Repeat cerebrospinal fluid analysis following two weeks of therapy showed an opening pressure of 95 mm H₂O. There were WBC, 21/cu mm with 98% mononuclears; RBC, 4/cu mm; and protein, 78 mg/dl.

There was gradual clinical improvement during the next several months. The patient was given INH, PAS-C, and a total of 50 gm streptomycin. The sputum smears and subsequent cultures were negative after two weeks of therapy. Neurologic dysfunction partially resolved, and repeat brain scan after eight months was still positive in the same area. By one year, neurologic examination showed normal results. A repeat technetium brain scan at 13 months showed no abnormality.

Case Two: A 67-year-old white male was in good health until onset of headache one month prior to admission to his local hospital. At that time, he

complained of nausea, vomiting, and photophobia. Cerebrospinal fluid analysis showed an opening pressure of 300 mm H₂O; WBC, 30/cu mm with 85% polymorphonuclears. A presumptive diagnosis of viral meningoencephalitis was made. Headaches increased in severity. His hospital course was complicated by progressive disorientation, slurred speech, and a single seizure. After a 12-day hospitalization, he was transferred to UKSM. Examination showed orientation to person and time, but not to place. There was no papilledema. A thorough neurologic examination was normal. Hemoglobin measured 14.6% and WBC, 10,000/cu mm with normal differential. Cerebrospinal fluid showed WBC, 360/cu mm with 82% mononuclears; RBC, 19/cu mm; protein, 108 mg/dl; and glucose, 17 mg/dl. Chest roentgenogram showed no evidence of tuberculosis and intermediate purified protein de-

TABLE II
RADIOLOGIC FINDINGS IN PATIENTS WITH INTRACRANIAL TUBERCULOMAS

Case	Skull Film	Brain Scan	Computerized Axial Tomography	Arteriography
1	2 mm shift of pineal to the left	3 × 6 cm area of increased uptake in the right posterior frontal area	Not done	Not done
2	Normal	Normal	Right parieto-occipital mass	Mass in the right posterior parietal region
3	Normal	Increased activity in the region of the left posterior fossa	3.5 cm doughnut-shaped lesion in the left cerebello-pontine angle with moderately dilated lateral and third ventricles	Avascular mass in the left cerebello-pontine angle

rivative skin test was negative. Skull films were normal; the technetium brain scan was normal. However, computerized axial tomography demonstrated a large mass in the right parieto-occipital region. A right carotid arteriogram confirmed the presence of the mass lesion. A brain biopsy was performed that showed granulomatous disease, and acid-fast bacilli were identified. *M. tuberculosis* was isolated from the biopsy tissue and cerebrospinal fluid. The patient was treated with INH, 300 mg/day; rifampin, 600 mg/day; and streptomycin, ½ gm/day (total 24 gm). His postoperative course was complicated by pancreatitis and peritonitis. He remained comatose postoperatively and died several weeks following transfer to his local hospital. No autopsy was performed.

Case Three: A 77-year-old white female entered UKSM with a three-week history of generalized headache. She also complained of nausea, vomiting, weakness, and fatigue. Her past medical history was negative for tuberculosis, and she had no known exposure. Physical examination showed dysdiadochokinesis, poor finger-to-nose orientation, and slowed rapid-alternating movement on the left. She also exhibited vertical nystagmus. Hemoglobin was 14.9 gm/100 ml; hematocrit, 44.5%; and WBC, 7,900/cu mm. The chest roentgenogram showed bilateral apical and left lower lung scars. Skull films were interpreted as normal, and electroencephalogram showed no focal abnormality. The technetium brain scan demonstrated an area of increased activity in the left posterior fossa. Computerized axial tomography confirmed a 3.5 cm doughnut-shaped lesion in the left cerebellopontine angle which effaced the fourth ventricle. The third and lateral ventricles were dilated. The mass was found to be avascular on left vertebral angiography. Preoperatively, a presumptive diagnosis of metastatic tumor or brain abscess was made. The lesion was excised at craniotomy; histopathology showed multiple granulomas with acid-fast bacilli present. *Mycobacterium tuberculosis* was isolated. The patient was treated with INH, 300 mg/day; rifampin, 600 mg/day; and ethambutol, 25 mg/kg/day for two months followed by 15 mg/kg/day. Followup at ten months revealed a completely normal neurologic condition.

Discussion

In the United States, most patients with intracranial tuberculomas are Blacks, American Indians, or are from lower socioeconomic groups.^{10, 11} In underdeveloped areas where many cases are seen, the usual age range has been the first three decades of

life.⁴ In contrast, all three of our patients were Caucasian and were life-long inhabitants of small middle west towns. Two were older than those usually expected to contract CNS tuberculoma (67 and 77 years vs United States mean of 37 years).¹¹

A negative intermediate strength tuberculin skin test does not exclude tuberculoma of the brain. In Arseni's series, 75 per cent had negative tuberculin skin tests.¹² A negative intermediate strength tuberculin skin test was found in two of our three patients; however, the test was applied after steroid therapy had been initiated in *Case Three*.

Patients with tuberculous meningitis are usually thought to present with CSF finding of an abundance of leukocytes — predominantly mononuclear — with increased protein and decreased glucose. Both of our patients showed increases in neutrophils rather than mononuclears on the first CSF examination. On repeat evaluation two weeks later, these had reverted to the usually expected profile. Thus early tuberculous meningitis as well as early viral meningitis may show the initial polymorphonuclear response later reverting to mononuclears.

Rich and McCordock¹³ postulated that tuberculous meningitis is caused by rupture of small tuberculomas into the subarachnoid space. However, the clinical association between tuberculoma and tuberculous meningitis has been rarely noted. Arseni found only 3 per cent of patients with a simultaneous tuberculous meningitis among 201 patients with tuberculomas.¹² Intracranial tuberculomas were demonstrated by use of a CAT scan in two of our patients who had both clinical and cerebrospinal fluid findings consistent with tuberculous meningitis. Culture of the cerebrospinal fluid from one of the patients yielded *M. tuberculosis*. The brain scan demonstrated the tuberculoma in the third patient. Similarly, Stevens and Everett used the CAT scan to demonstrate tuberculoma in the presence of tuberculous meningitis in one patient.⁹ Thus, the association of tuberculomas in the pathogenesis of tuberculous meningitis may be more common than has been recently recognized.

Whether antituberculous chemotherapy alone or in combination with neurosurgical drainage gives optimal results has not been clearly defined. The overall mortality has been about 16 per cent in patients in both categories, but no controlled trials have been studied. The recent report of 12 tuberculomas of the brain by Mayers and associates included seven patients who received antemortem antituberculous therapy. One of three who received antituberculous chemotherapy alone died, and one of four died who received chemotherapy and neurosurgical evacua-

tion.⁸ It therefore appears that the therapeutic approach to these patients must be individualized. Patients who show signs of increased intracranial pressure or have developing obstructive hydrocephalus should undergo neurosurgical intervention since healing of these lesions on chemotherapy alone may be quite slow, as illustrated by our *Case One*. Any patient who does not have another concomitant focus of bacteriologically proven *M. tuberculosis* — such as pulmonary or kidney involvement — should undergo neurosurgical exploration without delay to determine the nature of the intracranial mass lesions. On the other hand, patients who have smear- or culture-confirmed active pulmonary tuberculosis — with or without chronic meningitis — and a non-progressive, nondestructive central nervous system mass lesion, may be treated for tuberculosis and observed without surgical drainage as with our *Case One*.

The combination of isoniazid (INH) and rifampin (RIF) has been effective for tuberculous meningitis.¹⁴ Although streptomycin (SM) has been used for CNS tuberculomas,¹¹ recent studies indicate that ethambutol may be effective in the therapeutic regimen when meningitis is present.^{15, 16} Corticosteroids may be useful in treating patients with increased intracranial pressure from tuberculous meningitis and cerebral edema.¹⁷ Short courses of steroids used with chemotherapy have not been harmful when used in the treatment of tuberculous meningitis.^{17, 18}

References

1. Snider, D. E., Jr.: Extrapulmonary tuberculosis in Oklahoma, 1965 to 1973. *Am. Rev. Respir. Dis.* 111:641-646, 1975.
2. Dastur, H. M. and Desai, A. D.: A comparative study of brain tuberculomas and gliomas based upon 107 case records of each. *Brain* 88:375-396, 1965.
3. Ramamurthi, B. and Varadarajan, M. G.: Diagnosis of tuberculomas of the brain: Clinical and radiographic correlation. *J. Neurosurg.* 18:1-7, 1961.
4. Asenjo, A.; Valladares, H. and Fierro, J.: Tuberculomas of the brain: Report of one hundred and fifty-nine cases. *AMA Arch. Neurol. Psychiatry* 65:146-160, 1951.
5. Maurice-Williams, R. S.: Tuberculomas of the brain in Britain. *Postgrad. Med. J.* 48:678-681, 1972.
6. Anderson, J. M. and MacMillan, J. J.: Intracranial tuberculoma — an increasing problem in Britain. *J. Neurol. Neurosurg. Psychiatry* 38:194-201, 1975.
7. Leibrock, L.; Epstein, M. H. and Rybock, J. D.: Cerebral tuberculoma localized by EMI scan. *Surg. Neurol.* 5:305-306, 1976.
8. Mayers, M. M.; Kaufman, D. M. and Miller, M. H.: Recent cases of intracranial tuberculomas. *Neurology* 28:256-260, 1978.
9. Stevens, D. L. and Everett, E. D.: Sequential computerized axial tomography in meningitis. *JAMA* 239:642, 1978.
10. Schwartz, M. *et al.*: Tuberculomas of the central nervous system: Review and report of four cases successfully managed with surgery and chemotherapy. *Ann. Intern. Med.* 42:1076-1088, 1955.
11. Sibley, W. A. and O'Brien, J. L.: Intracranial tuberculomas: A review of clinical features and treatment. *Neurology* 6:157-165, 1956.
12. Arseni, C.: Two hundred and one cases of intracranial tuberculoma treated surgically. *J. Neurol. Neurosurg. Psychiatry* 21:308-311, 1958.
13. Rich, A. R. and McCordock, H. A.: The pathogenesis of tuberculous meningitis. *Bull. Johns Hopkins Hosp.* 52:5-38, 1933.
14. Visudhiphan, P. and Chiemchanya, S.: Evaluation of rifampicin in the treatment of tuberculous meningitis in children. *J. Pediatr.* 87:983-986, 1975.
15. Bobrowitz, I. D.: Ethambutol in tuberculous meningitis. *Chest* 61:629-632, 1972.
16. Place, V. A.; Pyle, M. M. and de la Huerca, J.: Ethambutol in tuberculous meningitis. *Am. Rev. Respir. Dis.* 99:783-785, 1969.
17. O'Toole, R. D. *et al.*: Dexamethasone in tuberculous meningitis. *Ann. Intern. Med.* 70:39-48, 1969.
18. Lepper, M. H. and Spies, H. W.: The present status of the treatment of tuberculosis of the central nervous system. *Ann. NY Acad. Sci.* 106:106-123, 1963.

Open House

STORMONT VAIL MEDICAL CENTER

1500 W. 10th Street

Topeka, Kansas

Saturday

June 30, 1979

8:30 AM

2 hrs Category I credit

Speaker: William Rial, M.D., AMA House of Delegates: "The Role of the Staff Physician in the Community Hospital in Cost Containment Health Care."

Dedication: Senator Nancy Landon Kassebaum

10:30 AM

Dependent Compression Mammography

A New Look at an Old Idea

LAWRENCE BIGONGIARI, M.D.;* BARBARA THREATT, M.D.;†
JANE E. BOYLES, R.T.;‡ CHRISTINE COMSTOCK, M.D.;†
LEONARD B. SKERKER M.D.;† and A. C. KITTLESON, M.D.,‡
Kansas City, Kansas

DEPENDENT COMPRESSION MAMMOGRAPHY (DCM) minimizes radiation dose and enhances detail by the application of maximum diffuse compression. The equipment is relatively inexpensive and the technique was refined by over ten years of use at the University of Michigan. Gershon-Cohen¹ wrote, "Roentgenologists differ among themselves in appraising techniques and it should not be surprising to find some difference of opinion about techniques best suited for mastography." Except for terminology, that statement is still true today. We feel that DCM is a very effective technique for daily use.

Description

Dependent compression mammography, performed using the Michigan Table (*Figure 1*), combines the principle of dependent positioning with the principle of compression. Gravity is utilized to displace the breast from the chest wall to allow optimum compression of maximum breast tissue. The patient lies prone on an elevated table with each breast alternately dependent through an opening in the tabletop. Beneath the table is an apparatus that compresses the breast uniformly. The compression device (*Figure 2*) consists of two opposing bakelite plates, each with a removable foam rubber sponge, joined by a worm gear. It has been recently described in detail.² The device rotates 90 degrees for imaging in both cranio caudad and lateral projections.

The patient is instructed to place her dependent breast in the device while the technician positions the breast between the compression plates and sponges.

Dependent compression mammography utilizes gravity to displace the breast from the chest wall in order to allow optimum compression of maximum breast tissue. The patient lies prone on a special table with each breast alternately dependent and placed into a device that compresses the breast uniformly. This technique produces adequate visualization even of dense breasts using either film or Xerox imaging. This safe, inexpensive, time-tested, and effective method is recommended for mammography.

The table is 4 feet high for the technician's convenience in positioning the breast. The film or xerox cassette is secured between the sponge pad and a bakelite plate on the side opposite the tube. As the opposing bakelite plates and sponges are brought together on the chest wall, the breast tissue is gathered and compressed into the midportion of the device. With the patient pushing into the device

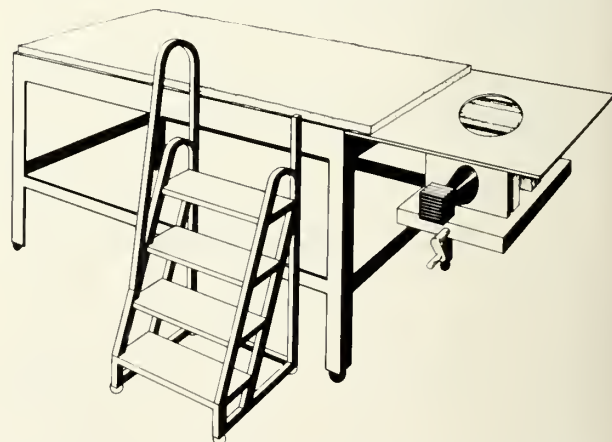


Figure 1. The Michigan Table. Drawing of compression device set for lateral view.

* Department of Diagnostic Radiology, University of Kansas School of Medicine, Kansas City, Kansas.

† Department of Radiology, University Hospital, Ann Arbor, Michigan.

‡ Department of Radiology, Alexian Brothers Hospital, San Jose, California.

Address reprint requests to Dr. Bigongiari, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

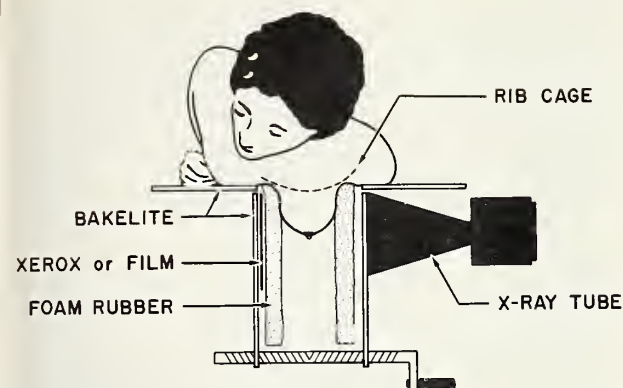


Figure 2. As the opposing plates and sponges come together on the chest wall, the breast is maximally and diffusely compressed with the film or Xerox cassette as close to the chest wall as physically possible.

while the compression plates gather breast tissue along the chest wall, the film or xerox cassette is approximated as close to the chest wall as possible. The deep breast structures are thereby well visualized in both cranio caudad and lateral projection. As with other devices, the end point of compression is determined by a combination of the technician's experience and the individual patient's tolerance. The sponges are gentler than plastic compression plates. Actual filming time is approximately five minutes for four views with repeat or additional views rarely necessary. Figure 3 is a photograph of the actual device, which can be constructed to attach to the end of a standard radiographic examining



Figure 3. The actual device set for cranio caudad view. The folded cloth serves as a head rest and the patient's feet go to the left.

table. A separate mobile table is recommended for convenience.

Discussion

Gershon-Cohen³ described a chest cradle for examination of the female breast consisting of a hammock with an opening through which the patient hung her breast. The breasts were alternately imaged. Erlich⁴ and Lame and Pendergrass⁵ separately described a standing position with the patient bending so that her breast was pendant for filming. Johnson and Wise⁶ described a motorized table with a canvas sling to facilitate this examination. The patient was tilted from upright to horizontal with her breasts dependent. Cranio caudad views were taken; then the patient was tilted from side to side for lateral views. Lasky⁷ described a technique in which the patient leaned over placing each breast alternately into a compression device. Dependent positioning without compression is now being used for computed tomography of the breast.⁸

Compression of the breast reduces the exposure (MAS) needed to produce an image by decreasing the thickness of the breast. Furthermore, by reducing scatter, by reducing object film distance and by immobilizing the breast, compression enhances detail in the image.⁹ Compression also spreads out the superimposed structures. It better defines masses, calcifications, or thickenings by increasing visualization of the fine detail of breast structures.

Figure 4 compares images produced using tabletop technique with images produced using dependent compression. The added detail and elimination of skin fold provided by increased compression in the dependent position is demonstrated. This technique can be used to advantage with both film and xerox systems.

Dependent compression provides uniform and maximum compression of breast tissue. A minimally compressed lateral view showing the chest wall serves to create a false sense of security, *i.e.* all or almost all of the posterior breast tissue is included but visualization of fine detail is lacking. Good detailed visualization of the posterior breast tissue is more important than visualization of the ribs. Visualization of the ribs can only be achieved at the expense of compression of the posterior breast.

Figure 5 demonstrates a common problem with axillary skin fold which can happen with upright compression but does not happen with dependent compression. In the dependent position, the breast falls evenly onto the film. In the cranio caudad projection, slightly more of the posterior breast is shown

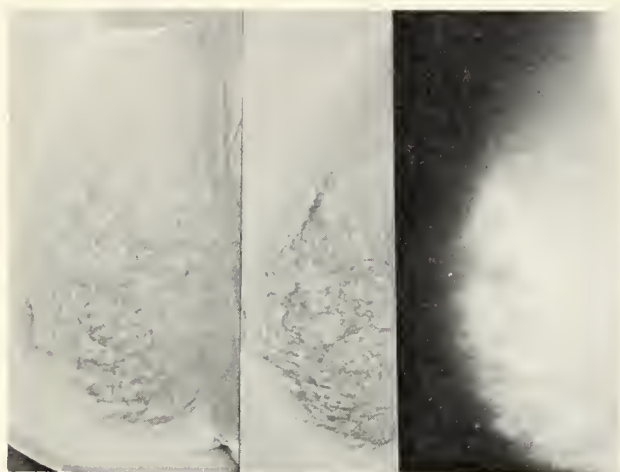


Figure 4a

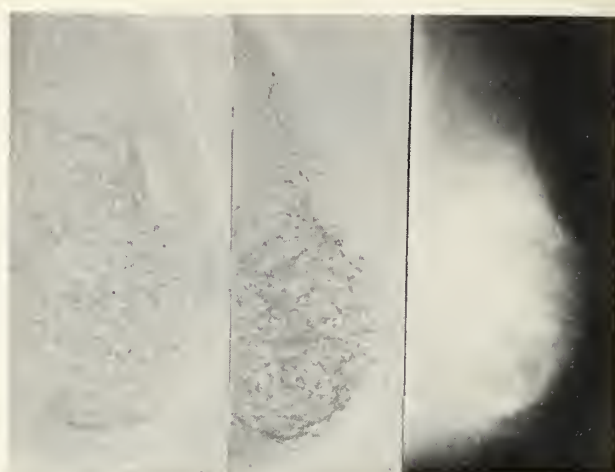


Figure 4c

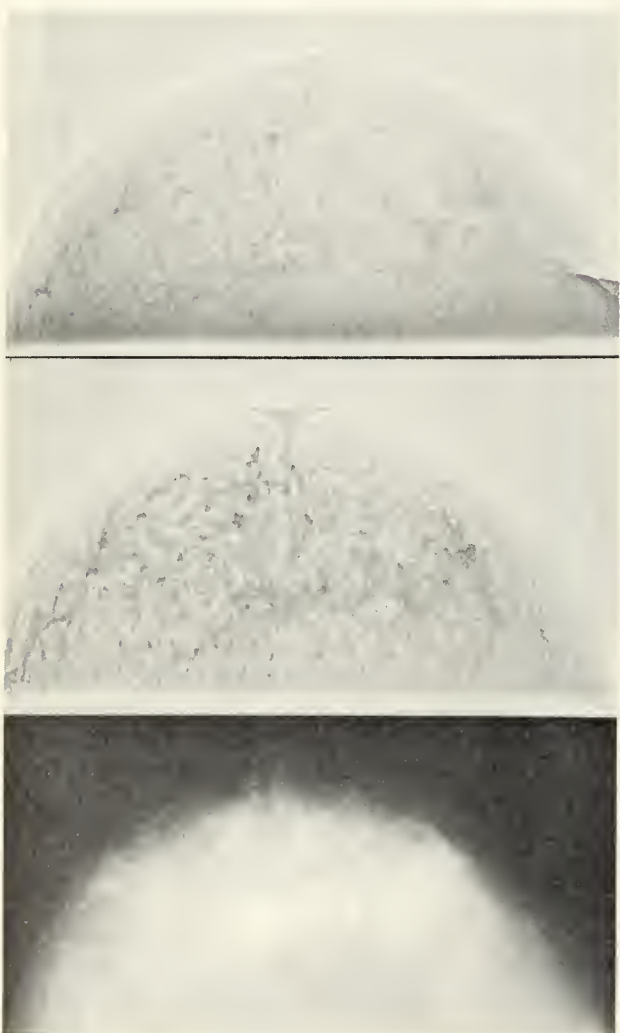


Figure 4b

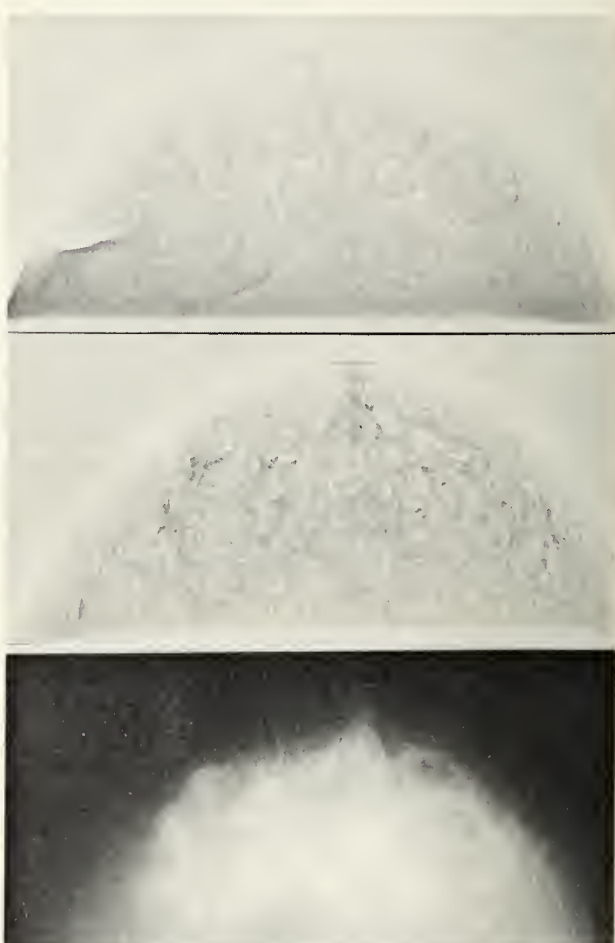


Figure 4d

Figure 4. Left breast with spiculated carcinoma approximately 12 o'clock position. a. Lateral projection. From left to right; table top with Xerox, DCM using

Xerox, DCM using film-screen. b. Left breast. Cranio caudad view top to bottom; table top using Xerox, DCM using Xerox, DCM using film-screen. c. Right breast of the same patient in lateral views. Same order, left to right. d. Right breast cranio caudad views. Central mass, which proved to be a cyst, better visualized by DCM.



Figure 5a

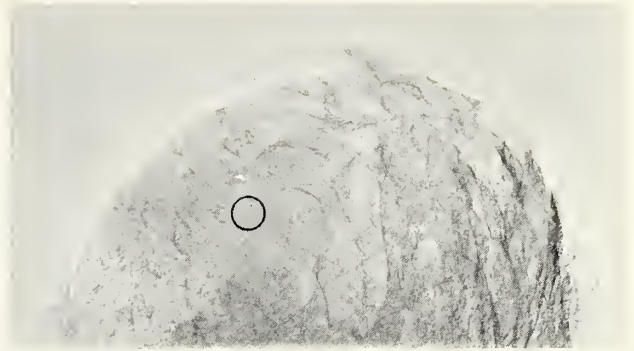


Figure 6. Dense breast examined in cranio caudad view by DCM using Xerox. Circle is around visualized calcification.



Figure 7. Normal male breasts right and left in lateral view using DCM. The skin fold is outside the compression device and can easily be held back with tape.

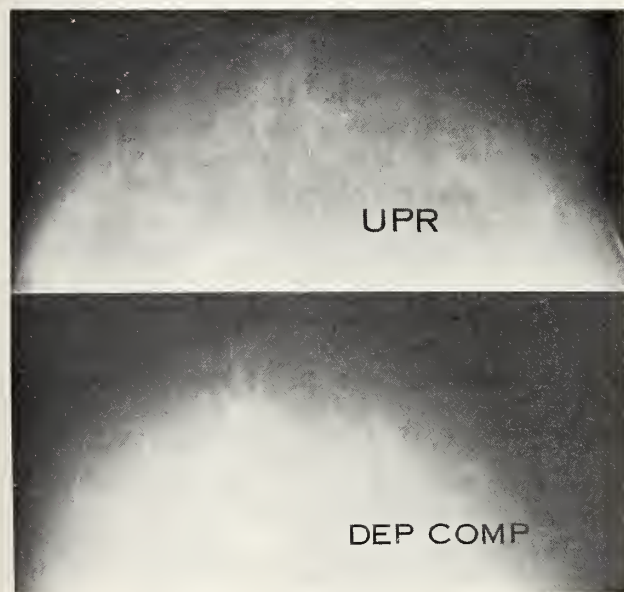


Figure 5b

Figure 5. a. Lateral views with upright machine compression left and DCM on the right. The carcinoma was hidden by axillary skin fold. b. Same breast in cranio caudad view using upright machine compression (top) and DCM (bottom) slightly more of the posterior breast is shown by DCM.

using dependent compression.

Figure 6 shows a dense breast with calcifications imaged with dependent compression. Male mammography (Figure 7) is facilitated by this technique since the compression device holds the breast tissue on the film.

The initial expenditure for the dependent compression equipment is trivial compared to commercially available devices, but it must be homemade. A machinist's estimate for professional construction of the compression device is approximately \$750. It can be made at least partly from scrap with cost dependent on ingenuity. The mobile table can be constructed from commercially available lumber. The generator, tube stand, and tube can be purchased separately or salvaged.

Obviously, image quality is essential for the interpretation of mammograms. We present this approach to mammography in the hope that objective consideration of it may provide others with insight into their own techniques. For some, substitution with part or all of dependent compression mammography may be a substantial improvement.

Conclusion

Dependent compression mammography produces adequate visualization even of dense breasts by either film or xerox. In view of the current concern about minimizing patient dose and constantly rising costs, this safe, inexpensive, time-tested, and effective method is recommended for mammography.

References

1. Gershon-Cohen, J.: Mastography. *Radiol. Clin. North Am.* 1:115-142, 1963.
2. Bigongiari, L. R. et al.: A simple device for dependent compression mammography. *Radiology* 124:516-517, 1977.
3. Gershon-Cohen, J.: Cradle for radiography of female breast. *Radiol. Clin. Photog.* 13:14-15, 1937.
4. Erlich, D. E.: Pendant mastography. *Radiology* 36:488-490, 1941.
5. Lame, E. L. and Pendergrass, E. P.: An addition to the technic of simple breast roentgenography. *Radiology* 48:266-268, 1941.
6. Johnson, D. O. and Wise, R. E.: A technique of mammography. *Surg. Clin. North Am.* 45:787-790, 1965.
7. Lasky, J. H.: A new mammographic technic. *Radiology* 19:381-383, 1968.
8. Chang, C. H. J. et al.: Computed tomography of the breast: A preliminary report. *Radiology* 124:827-829, 1977.
9. Minagi, H.; Tennant, J. C. and Youker, J. E.: Coning and breast compression and aid in mammographic diagnosis. *Radiology* 91:379-381, 1968.

What They're Saying

Cost Containment

It is irrational to deny the need for some alteration in the manner in which medical care is rendered and recompensed when there are 22 million Americans who either can't get good, prompt health care, or afford to pay for it after they get it. The public is not interested in a recitation of how good our health system is, or how most people already have some form of health insurance, or of how much life styles interfere with good health. It is also irrational to deny the legitimate interest of the government in regulating the activities of a profession which utilizes 8.7 per cent of the gross national product and 10 per cent of the entire federal budget. And, most difficult of all, it is irrational to perceive of the medical profession as separate and apart from the pressures of ethical changes in an evolving society.

It is tempting to think of the profession as going on forever, clinging to sacred standards of conduct, but it is also easy to miss the distinction between profession and function. Clearly the function will continue, but the profession may be destroyed, or indeed destroy itself, depending upon this response to the dissatisfaction now being expressed in so many diverse ways by those outside the profession.

The tragedy of American Medicine may well be that while quick to accept scientific changes, the profession could not adapt to the social consequences of those changes. The profession need not abandon principle, but it does need to face reality, squarely and unafraid, recognizing that opposition without viable alternatives to clearly existing problems is no longer possible. The ultimate challenge is before us; either we move with the society toward more rational solutions to common problems, or we continue the independence of the past, leading to the ultimate bankruptcy of the health care system.

JAMES S. TODD, M.D., chairman of the board, Medical Society of New Jersey, and chairman, AMA Ad Hoc Committee to Review the Principles of Medical Ethics, *The Hampden Hippocrat* (Mass.), December, 1978.

Elusive Search

Do Viruses Cause Human Cancer?

RICHARD A. CONSIGLI, Ph.D. and MELVIN CENTER, Ph.D.

Division of Biology, Kansas State University*

FOR OVER 70 YEARS scientists have pondered the idea that viruses could cause human cancer. Only within the last 15 years has the idea gained respectability. It was obvious from the beginning that cancer in humans did not behave like other diseases of viral origin. It did not appear to be contagious, and there were no confirmable isolations of a human tumor virus.

Despite these findings, some scientists have accumulated evidence that proves that viruses do in fact cause cancer in animals. So, the recurring question remains: If viruses cause cancer in animals — why not in humans? During the past few years it has become evident that other factors play a role in the causes of some cancers, factors such as genetic disposition, immunological deficiency, nutritional patterns, and exposure to chemicals or radiation. Further, it now appears that certain major human cancers, such as lung, colorectal and skin, do not have any viral involvement.

It is often argued that human tumor viruses do not exist because they cannot be identified in tumor cells. However, the absence of a virus does not necessarily preclude its involvement in tumor formation. It may be that the virus is present in the organism only long enough to initiate genetic changes that lead to the transformation of the cell. It can also be argued that complete virus particles may never be found since, in most cases, the formation of progeny virus leads to cell death. Then again, viral “footprints” may be present in the cell in the form of viral DNA that has integrated into the host chromosome. This DNA may specify certain gene products that are required for the establishment and maintenance of the cancer cell. Of course, there may be a requirement that two or more factors act together or in sequence. This would explain why cancer is not contagious.

The first DNA viruses suspected of being involved

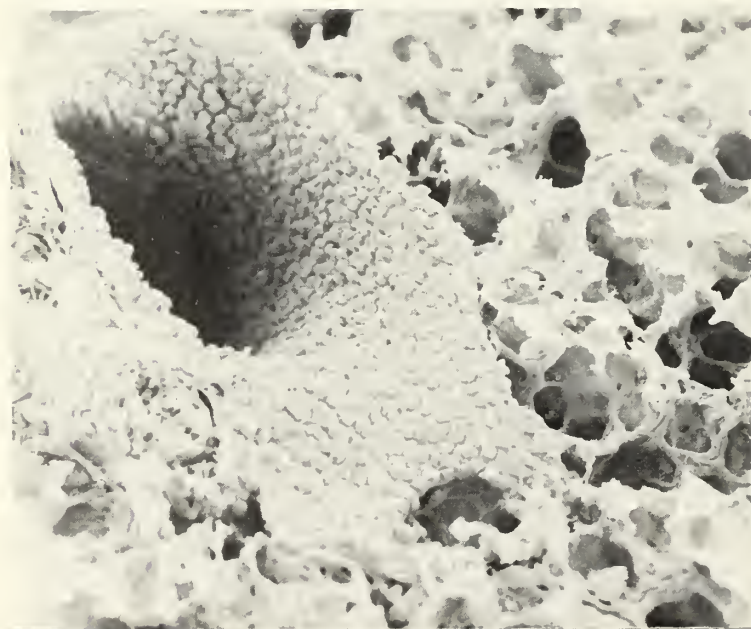
in human cancer were the adenoviruses and the papovaviruses (SV40 and polyoma). When these viruses are associated with man, they produce adeno-respiratory infections. When associated with laboratory animals, both virus types bring about cell transformation in cell culture. Papovaviruses also produce some animal tumors.

Although adenoviruses and papovaviruses are found to occur quite commonly, their involvement in human cancer has yet to be established. It is interesting to note, however, that several human papovaviruses have been isolated from patients with progressive multifocal leucoencephalopathy and subacute sclerosing panencephalitis. In addition, viruses with considerable homology with SV40 have been shown to transform human cells in culture.

Despite negative results, there still may be a few human cancers that have viral involvement. The most likely candidates are nasopharyngeal carcinoma and Burkitt's lymphoma, a cancer commonly found in the inhabitants of certain regions of western Africa. In both of these cases, Epstein-Barr virus, a herpes virus, is found in nearly all of the cells of the cancerous tissue. However, the presence of the virus at “the scene of the crime” cannot exclude the possibility that it is simply a passenger in the cells, having nothing to do with the pathological condition.

There is some evidence for the presence of retrovirus (RNA virus that contains reverse transcriptase) “like” particles in human mammary tumors. Studies over the past several years have led to the isolation from some tumor cells of a 600 S particle which exhibits many features characteristic of RNA tumor viruses. The particles contain reverse transcriptase and 70S RNA which exhibits detectable homology to the RNAs of the mouse mammary tumor virus and of the Mason-Pfizer monkey virus. Recently, retrovirus particles were isolated from the culture fluids of a permanently established malignant lymphoma cell line. While these particles appeared to be related in some degree to type C viruses of subhuman primate origin, many workers in the field questioned the significance of these findings.

* Drs. Consigli and Center are affiliated with the Mid-America Cancer Center Program at the University of Kansas School of Medicine-Kansas City.



Scanning electron imagery provides insights into tumor virus morphology.

Of particular concern is the infrequency of detection of retrovirus in human tumors, which is in strong contrast to the ubiquity of retroviruses in murine leukemias and mammary tumors. It would seem that since so much is known about RNA tumor viruses, they should be readily detectable if they are present in human tumors.

Probably the greatest obstacle in proving that a virus causes human cancer is Koch's postulates. These postulates have served for almost a century as the criteria for establishing whether a disease is caused by a given infectious agent. One postulate requires the isolation of the agent from all infected organisms. As viruses cannot be seen in fresh human tumor cells nor can infectious particles be recovered from them, this prerequisite cannot be satisfied. Another postulate requires an experiment that cannot be performed in humans with a suspected tumor virus: induction of the disease in a suitable animal (man) by a pure preparation of the agent.

Despite our present inability to identify a human tumor virus, virological studies during the past have been very rewarding, providing many significant contributions to molecular biology. There is certainly reason to expect that future research on animal viruses will yield many more exciting findings. It is hoped that this work will eventually lead to a clear definition of the involvement of viruses in the causes of human cancer.

Use Your
Medical
Libraries

PKU and Hypothyroidism

Are We Missing Cases in Kansas?

PATRICIA T. SCHLOESSER, M.D.; JOSEPH G. HOLLOWELL, M.D.;
MARJORIE PETTY, M.S.; SARA BONAM, M.S., R.D.; and
HELEN KINGSTON MARTIN, R.N., Topeka

THE HEALTH COMMUNITY of Kansas should be alert to the potential for overlooking phenylketonuria (PKU) or hypothyroidism if certain precautions are not taken in the screening process.

Routine screening of newborns for PKU and hypothyroidism is established by law in Kansas, and is accomplished with the support of physicians, hospitals, and the Genetic Disease Program of the Kansas Department of Health and Environment. The Advisory Committee for the Genetic Disease Program, composed of representatives of the two branches of UKSM, the Kansas Department of Health and Environment and the Genetic Counseling Center of Topeka, has become concerned about the degree to which results of PKU and hypothyroidism tests are affected by breast feeding. Literature indicates that breast milk may contain significant quantities of thyroxine. Also, the phenylalanine content of human milk is lower than that of cow's milk.^{1, 2} These factors could affect the accuracy of the initial screening results in breast fed infants.

Burman *et al.*¹ report that the use of breast milk or low protein infant foods may cause difficulty in the diagnosis of PKU:

In infants who are completely breast fed, screening carried out after the second week may be misleading and a subsequent fall of phenylalanine may be due to reduced phenylalanine intake in cases of PKU rather than transient neonatal enzyme defects.

In a case report/review, Binder *et al.*² stated that any breast fed infant with a mild elevation in serum phenylalanine will require close monitoring of these levels until after the introduction of solid foods. In most cases, however, the blood levels of phenylalanine in infants receiving breast milk rises rapidly to diagnostic levels.

Bode *et al.*,³ studying the effect of breast feeding on hypothyroidism, concluded that the thyroxine content in breast milk can be significant enough to delay the diagnosis of severe hypothyroidism and

delay the onset of impaired neurological development. The study was precipitated by a case in which observations suggested that breast feeding had masked hypothyroidism in an athyrotic infant. The implication is that the thyroxine level in breast milk could also affect the accurate detection of hypothyroidism in the breast fed infant.

There is current controversy about the necessity for obtaining a second blood specimen for PKU testing. According to the 1974 edition of *Hospital Care of Newborn Infants*, retesting is not necessary if milk intake is adequate and the first test is obtained no earlier than the third day of life. Holtzman⁴ recommends a second test be performed for all infants between one and four weeks of age who were screened on or before the fourth day of life, or for infants with vomiting or feeding difficulties prior to the time the first test was collected. With the increasing trend in Kansas toward early hospital discharge following birth, many physicians are retesting routinely. While routine rescreening is not part of the Kansas statute, consideration should be given to the retesting of infants at greater risk of false-negative results on initial screening. Ideal screening for PKU and hypothyroidism would identify all infants with these diseases, with a minimum number of false-positive results. Recent experience, however, indicates that initial screenings appear to be affected by the timing of the test, the type and amount of milk intake,^{1, 2, 5, 6} and by factors such as low birth weight.⁷ A major concern is that infants with these diseases may be missed if these high risk groups are not retested.

The Department of Health and Environment, Bureau of Maternal and Child Health, has arranged for consultation to be available to physicians in Kansas concerning these questions, as well as assistance in the treatment of patients with these diseases. These pediatric consultants are located at the branches of UKSM in Kansas City and Wichita.

In summary, there is a high risk of overlooking infants with PKU and hypothyroidism if certain pre-

cautions are not taken with breast fed infants, low birth weight infants, and infants who are tested before the third day of life.

References

1. Burman, D.; Holon, J. and Allen, J.: Phenylketonuria masked by low protein feeds. *Arch. Dis. Child.* 52:328-333, 1977.
2. Binder, J.; Johnson, C.; Saboe, B. and Krug-Wispe, S.: Experience Reason, Briefly Recorded. *Pediatrics* 63(2), 1979.
3. Bode, H.; Vanjonack, Wm. and Crawford, John: Mitigation of cretinism by breastfeeding. *Pediatrics* 62(1), July, 1978.
4. Holtzman, N.: *Newborn Screening for Genetic Metabolic Diseases: Progress Principles and Recommendations*, pub. no. (HSA) 77-5207, US Dept. of HEW, Rockville, MD 20857.
5. Holtzman; Meed and Mellits: Neonatal screening for phenylketonuria. *JAMA* 229:668, 1974.
6. *Hospital Care of Newborn Infants*, pub. no. 77075542, Evanston, Illinois, American Academy of Pediatrics, p. 69, 1974.
7. Hambraeus, L. and Wranne, L.: The plasma phenylalanine level in newborn infants of normal and low birth weight fed on human milk. *Biol. Neonate* 13:315-324, 1968.

MORE HOME HEALTH CARE URGED

The American Medical Association this summer is continuing its efforts to encourage wider use of home health care as an alternative to the hospital or nursing home. "Home health care has demonstrated that it is an effective and less expensive means of providing health services as an alternative to more costly institutional care," declares a new document from the AMA.

Cost savings that can be achieved through home care are demonstrated through the experience of two programs, the AMA points out. Blue Cross of Greater Philadelphia Home Care Program cites an average of 11.2 hospital days saved per case through home care over a three-year period for a savings of \$4.6 million. Blue Cross of Connecticut reports an average of nine hospital days saved per case for an estimated savings of \$4 million.

In addition to cost considerations, which may be tremendous on a national scale, patients prefer care that can be provided in their own home environment, the AMA statement says. Home-bound persons can be taught to live in a relatively independent status. The efficiency of the physician can be increased by expanding the team approach to health care.

Capital construction costs for building new hospitals can be decreased and the need for initial admission or readmission to inpatient facilities can be reduced. And the hospital or nursing home stay can be reduced through early discharge to home care. In 1972, the AMA adopted a policy statement that home health services "should be viewed as an alternative to hospital, nursing home, or other institutional care and as a part of a total medical care plan."

The AMA defines home health care as "any arrangement for providing, under medical supervision, needed health care and supportive services to a sick or a disabled person in his home surroundings. The provision of nursing care, social work, therapies (such as diet, occupational, physical, psychological, and speech), vocational and social services, and homemaker-home health aide services may be included as basic components of home health care."

Legislation to require insurers to make available benefits for home health care already has been enacted by seven states: Arizona, California, Connecticut, New Mexico, New York, Vermont, and Wisconsin. Twenty-one states, including Kansas, have enacted legislation regulating home health care agencies which provide service to patients.



Current COMMENT

Paget's Disease of Bone

BARBARA P. LUKERT, M.D., *Kansas City, Kansas*

PAGET'S DISEASE of bone is a benign neoplasia that involves the activation of a greater than normal number of new osteoprogenitor cells resulting in an increase in the number of osteoclasts and osteoblasts. This condition is relatively common, occurring in 3.3 per cent of patients examined at autopsy who are over 40 years of age. It is estimated that 2.5 million individuals in the United States suffer from this skeletal disorder. The disease appears to have a familial tendency and seems to be related to geography and race. It is exceedingly rare in Orientals and Scandinavians, but relatively common in people from Great Britain, Australia, France, Germany, and the United States.

In 1877 Sir James Paget first described the disease bearing his name: "It begins in middle age and later, is very slow in progress, may continue for many years without influence on the general health, and may give no other trouble than those which are due to the changes of shape, size and direction of the diseased bones. Even when the skull is hugely thickened, and all its bones exceedingly altered in structure, the mind remains unaffected. The disease affects most frequently the long bones of the lower extremities and the skull, and is usually symmetrical. The bones enlarge and soften, and those bearing weight yield and become unnaturally curved and misshapen. The spine, whether by yielding to the weight of the overgrown skull, or by change in its own structure, may sink and seem to shorten with greatly increased dorsal and lumbar curves; the pelvis may become wide, the necks of the femora may become nearly horizontal, but the limbs however

misshapen, remain strong and fit to support the trunk. In its earlier periods, and sometimes through all its course, the disease is attended with pain in the affected bones, pain widely various in severity and variously described as rheumatic, gouty or neuralgic, not especially nocturnal or periodical." Now, more than a century later, little progress has been made in determining the causes nor do we have a better description of the disease.

The initial lesions appear to be an increase in osteoclastic bone resorption followed, secondarily, by an increase in osteoblastic activity and new bone formation. As a result of this markedly increased bone turnover, structurally abnormal bone is formed with the matrix losing its normal lamellar structure, and a mosaic pattern is seen. The classical x-ray finding is that of an area of very dense bone adjacent to a lucent area where increased resorption has occurred.

Most patients found to have x-ray evidence of Paget's Disease have no symptoms. Patients with symptoms most frequently complain of pain in the back and lower limbs, deafness, curvature of the lower limbs, or increasing head size. The temperature may be increased in the skin overlying the involved area due to increased blood flow.

Although complications are relatively rare, they can be quite serious, resulting from an increase in the thickness of bone. The best known neurologic complication is deafness, which may be either nerve or conductive in origin. Spinal cord compression sometimes occurs when there is vertebral involvement and, rarely, gross distortion of the skull leads to compression of the cranial nerves, medulla, pons or cerebellum, or hydrocephalus. Folic acid deficiency can occur as a consequence of increased requirement due to increased bone cell metabolism.

From the Department of Medicine, Division of Metabolism, Endocrinology and Genetics, University of Kansas School of Medicine, Kansas City, Kansas.

Increased cardiac output due to increased vascularity of the involved bone may be demonstrated in individuals in whom the disease involves more than one third of the skeleton. The disease process may be progressive or may spontaneously remit with only fibrotic changes remaining. The incidence of osteogenic sarcomas is increased, but fortunately occurs in less than 0.2 per cent of patients with the disease.

Activity of the disease can be assessed by measuring serum alkaline phosphatase and urinary excretion of hydroxyproline. In active disease the serum alkaline phosphatase is markedly increased, which reflects the increase in osteoblastic activity. Hydroxyproline is an amino acid unique to collagen, and the urinary excretion of this substance correlates well with the rate of skeletal turnover — increased rates of excretion reflect increased turnover. The degree of elevation of alkaline phosphatase and hydroxyproline excretion correlates well with the extent of skeletal involvement. Bone scans with Technetium 99-m labeled diphosphonate, fluorine 18 or strontium provide a sensitive technique for evaluating the location and activity of Paget's Disease. These bone-seeking isotopes localize in pagetic lesions.

Indication for Therapy

None of the presently available forms of therapy has been used long enough to be evaluated in terms of duration of improvement induced or ability to improve the mechanical strength of involved bone. In addition, a large percentage of patients become unresponsive to therapy after 12-18 months. In light of this, all of the agents discussed below should probably be reserved for the symptomatic patient. Bone pain which cannot be relieved by salicylates and neurologic deficits appear to be the most clear cut indications for treatment with one of these agents.

Treatment

Many therapeutic agents have been administered to patients with Paget's Disease. Such diverse agents as acetylsalicylic acid (ASA), arsenic, anabolic steroids, glucagon, adrenocorticoids, sodium fluoride, folic acid, and phosphate have been used. All of these agents, except ASA, have been abandoned because of either a lack of favorable response or unacceptable toxicity. In recent years, however, new agents have become available for clinical trial, several of which have produced favorable results (Table I). ASA frequently relieves symptoms and should be used as a first line drug. Its effect may be

TABLE I
TREATMENT OF PAGET'S DISEASE

1. Aspirin
2. Calcitonin 100 MRC units subcutaneously every other day
3. Etidronate sodium 5 mg/kg/day p.o. for 6 mos.
4. Mithramycin 15-25 μ g/kg/day I.V. for 10 days

mediated by its ability to inhibit prostaglandin synthetase.

Calcitonin

Calcitonin is a hormone produced by the C cells of the thyroid gland and excreted in response to hypercalcemia. Calcitonin inhibits bone cell differentiation and osteoclast activity, thus breaking the cycle of increased bone resorption and the compensatory increase in osteoblastic activity. Armour Company has recently marketed synthetic salmon calcitonin (Calcimar). This is calcitonin with the same amino acid sequence as that native to salmon calcitonin, the most potent form of the hormone on a weight basis. Calcitonin must be administered subcutaneously and the recommended dosage is 100 Medical Research Council (MRC) units/day. However, many patients experience symptomatic hypocalcemia when given this dose, and doses as low as 50 MRC units three times/week have been reported to be clinically effective. It is wise to measure the serum calcium six to eight hours after the first dose. If the serum calcium falls below 8.0 mg/dl, the dose should be reduced.

Calcitonin produces an immediate fall in urinary excretion of hydroxyproline reflecting its effect on osteoclasts. The serum alkaline phosphatase usually does not decrease until after one or two weeks of treatment. The biochemical improvement is accompanied by relief of pain. The most encouraging observation is that bone formed during treatment has normal lamellar structure. Improvement of neurologic symptoms has been reported.

Adverse effects from the hormone have not been severe. A feeling of warmth in the face and hands may occur within a few minutes of the injection and last for about 30 minutes. This may be associated with flushing of the face, transient nausea, and a tingling sensation in the extremities and pharynx. Urticaria has been observed, and patients should be skin-tested before therapy is initiated. Specific instructions for skin testing are included in the package inserts. Some patients develop a high titer of antibodies which neutralizes the biologic effect of the hormone. However, in others the biologic effect

persists despite the development of antibodies. Elevation of serum parathyroid hormone has been reported during treatment but this may be transient. Theoretically, treatment with calcitonin could induce secondary hyperparathyroidism although this has not been substantiated.

Calcitonin appears to be an effective form of therapy of Paget's Disease. It results in both biochemical and clinical improvement in 80 per cent of patients treated. However, after one year of treatment, about one-third show rebound elevations of serum alkaline phosphatase and urinary hydroxyproline but maintenance of clinical improvement. The reason for the biochemical rebound is unclear. It may be due to development of antibodies, PTH hypersecretion, or bone cell resistance to calcitonin. From a practical standpoint the major disadvantages of Calcitonin therapy are route of administration and expense.

Diphosphonates

Ethane-1-hydroxy-1, 1 diphosphonate (Etidronate sodium, trade name Didronel), is a compound related to pyrophosphate. It contains a molecular backbone of P-C-P instead of the P-O-P bonds of pyrophosphate. The therapeutic use of this agent is based on the knowledge that pyrophosphate — an ion found as an ubiquitous end product of cell metabolism — is of regulatory importance in bone metabolism. Pyrophosphate has been demonstrated to inhibit both formation and dissolution of hydroxyapatite crystals by binding to exposed mineral surface and inhibiting the conversion of noncrystalline, amorphous calcium phosphate to hydroxyapatite crystals. It is not feasible to administer exogenous pyrophosphate because it is rapidly degraded by pyrophosphatases. In contrast, the diphosphonates, while having the same effect on bone, are not hydrolyzed by pyrophosphatases and thus maintain prolonged inhibitory activity on mineral growth and dissolution.

Several investigators have reported beneficial effects from diphosphonate in relieving bone pain, normalizing serum alkaline phosphatase and hydroxyproline excretion, and improving bone histology. Bone biopsies show a marked decrease in abnormal resorption surfaces, number of osteoclasts, and calcification rate following therapy with diphosphonate.

The usual recommended dose of Etidronate sodium is 5 mg/kg/day for a period of six months. Some patients maintain biochemical and chemical remission for two years or longer after termination of

therapy, while others relapse as early as three months. Higher doses (10-20 mg/kg/day) cause osteomalacia, an increase in the incidence of bone pain and nontraumatic fractures, and reversible hypophosphatemia. At the lower dose of 5 mg/kg/day, the agent is relatively free of complication. The only adverse side effect is minor gastrointestinal disturbance which is seen in about 10 per cent of patients. Occasionally, severe diarrhea may necessitate discontinuation of therapy.

When improvement occurs with the recommended dose of 5 mg/kg/day for six months, no significant further improvement results after prolonged therapy. When relapse occurs, another course of therapy may again result in improvement. Long-term studies are needed to determine if therapy would prevent deformities, fractures, or osteogenic sarcoma.

Mithramycin

Mithramycin — an antibiotic produced by *Streptomyces plicatris* — is an antineoplastic drug used in the treatment of active Paget's Disease. Its use was suggested by the observation that some patients receiving the drug became hypocalcemic. The drug acts by binding with DNA, preventing DNA reduplication, thus blocking protein synthesis in osteoclasts.

The action of mithramycin on bone turnover is probably mediated through a cytotoxic activity against cells that break down bone, presumably osteoclasts and possibly osteocytes. When this drug is administered, there is a rapid decrease in urinary hydroxyproline coupled with hypocalcemia. The serum alkaline phosphatase falls more slowly. This sequence suggests that the primary effect of the drug is on osteoclastic activity, and that the slower decline of the alkaline phosphatase reflects the gradual decline in compensatory osteoblastic activity. The improvement in biochemical findings is accompanied by alleviation of pain which may be accomplished with as little as four days of therapy.

Ryan and coworkers have reported that daily 8-12 hr intravenous infusions of mithramycin, 15-25 μ g/kg body weight/day for ten days results in remissions which may last between one and two years. The major disadvantage of the drug in treating Paget's Disease is its toxicity. Administration of the drug almost always causes a rise in liver enzymes, but this is usually transient. Transient renal toxicity is frequent, and a few patients have maintained permanent elevation in blood urea nitrogen after treatment. Hematologic toxicity is rare, although brief falls in platelet counts have occurred.

In summary, mithramycin produces dramatic biochemical and clinical improvement in patients with Paget's Disease. However, in view of its potential toxicity, its use in this disease should probably be reserved for patients whose disease is refractory to other available forms of therapy.

Evaluation of Therapy

The evaluation of any agent used in the treatment of Paget's Disease must be based on biochemical or histologic evidence of normalization of bone turnover. The pitfall of evaluating efficacy by assessing symptomatic improvement is illustrated by a study that demonstrated that pain related to Paget's Disease was relieved by placebo in 33 per cent of patients studied. One must also take into account spontaneous fluctuations in the activity of untreated Paget's Disease. Response to therapy can be adequately monitored by measuring the serum alkaline phosphatase every three months.

Summary

Paget's Disease of bone is a benign neoplasia that manifests as increased bone turnover. Calcitonin, mithramycin and disodium etidronate have been found to decrease bone turnover and suppress certain clinical manifestations of this disease. Calcitonin appears to be the least toxic and most physiologic of the three. Long term observations will be necessary before the diphosphonates can be adequately evaluated. Their use is made more attractive by the fact that they can be taken orally. At the present time, treatment should be reserved for the symptomatic patient.

Self Assessment Questions

True or False

1. Paget's Disease is always symptomatic.
2. Measurement of serum alkaline phosphatase is a reliable test for assessing the activity of Paget's Disease.
3. The diphosphonates can be given continuously and indefinitely for treatment of Paget's Disease.
4. If a patient has x-ray changes compatible with Paget's Disease and an elevation in the serum alkaline phosphatase he should be treated regardless of symptomatology.
5. Mithramycin is the drug of choice for the treatment of Paget's Disease.

(Answers on page 388)

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.



The Medical Office Manual – Your Key To Practice Productivity

Ed Note: This is the 14th in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December, 1978 and January, February, March, and May, 1979.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

IT WAS 6:30 PM and Dr. Ron Falck had just completed a general assessment on John Henry, the 5:00 PM appointment. Although his office hours were 9:00-5:00, he seldom left his office before 7:00 PM. As Dr. Falck slouched over the six-inch pile of paperwork in front of him, he began wondering how things could be improved.

Thinking about his practice, he felt that patient service appeared to be deteriorating as more emphasis was being placed on administration by himself and his staff. It seemed to him that his staff turnover was fairly high. Too, he did not feel that all office procedures were being done accurately and efficiently, but since he was seeing 40 patients/day, he did not have time to train his assistants properly. What was the answer to his present dilemma?

Dr. Falck's problems were the result of a multitude of factors on many levels. No doubt, many practices suffer the same symptoms as Dr. Falck's. Happily, there are solutions which allow you to have greater control over the efficiency of your practice. A key one is the design and use of a medical office manual. That is what Dr. Falck did.

A medical office manual is one of the most valuable assets that you, the doctor, can have to

maximize personal and staff productivity. This manual is basically a detailed guide on how you want your office to operate. Well-run businesses and doctors' offices who use them find that their office operates much more smoothly and efficiently.

Why Do I Need One

Office manuals have many benefits:

- First, they force you to assess and examine your present methods and procedures. You and your staff are compelled to ask the questions — who, what, where, when, and why; with respect to office duties and tasks;
- A manual allows you to delegate effectively because it provides a clearly written methodology for your staff to follow with respect to certain procedures, such as preparing the patient;
- A medical office manual lays out — clearly and concisely — the way various tasks should be performed in the office. In that way, there can be no misunderstandings with respect to tasks being completed;
- Since standard procedures are clearly defined, staff training time is saved;
- An office manual promotes communication between staff and physician as to the way in which things are presently done. Therefore, it serves as a "trouble shooter" to potential problems and as a catalyst to a pleasant productive office atmosphere;
- A manual allows you to work at your most efficient level, and it should be your goal to insure that all work performed by others is documented step-by-step, so that you and your staff can be working most efficiently, most regularly.

How to Design the Manual

The most important consideration in designing your manual is to involve all physicians in your practice and staff in the process. One person, however, should coordinate the project.

With maximum staff involvement, acceptance of the manual for implementation becomes easier. Since one person is coordinating the project, you are assured of continuity.

The first step is to ask each person to write in as much detail as possible about the job they are doing. Next, the program coordinator should observe each job, and add details to the initial description where needed.

Before the manual is completed and put into full operation, there should be a trial period of at least a month to test the validity of its contents. This allows everyone a chance to assess what has been written and whether any changes are required.

It is important that the manual be easy to read; and it should be put in a looseleaf, three-ring binder so that changes can be made easily.

It should be a policy that the manual be updated periodically, and major revisions of the manual be done at least once a year. Outlined below are some of the key categories that should be covered in your office manual:

- A. *Practice description:*
 - Practice goals
 - Practice philosophy
 - What is unique about our practice?
- B. *Office Procedures and Protocol:*
 - Office hours
 - Staff meetings
 - Changes in manual
 - Office appearance and cleanliness
 - Doctors' schedules
- C. *Personnel Policy:*
 - Staff benefits
 - Staff evaluation
 - Payroll calculations
 - Holiday policy
 - Sick leave policy
 - Terminations
 - Hiring policies
 - Dress regulations

D. *Staff responsibilities:*

- Relationships between staff
- Relationship with physician(s) and office manager

- Who does what and when?

- What to do on a slow day

E. *Task descriptions* (a detailed description by tasks performed):

- Opening and closing the office

- Where to find its guide

- Appointment scheduling

- Patient files

- Collections

- Insurance form and Medicare processing

- Emergency procedures

- Paramedical procedures

- Inventory control

- Miscellaneous

A key section of the manual should be a detailed description of the relationships between staff and physicians. Every person in the organization should know what they are responsible for, who they are responsible to, and when various tasks should be completed. A clear definition of roles facilitates this process. This is most important if there are more than three staff members in the practice.

In the detailed description of tasks completed, it is recommended that you break these tasks down into their major sub-components. As a guidepost, remember to identify the logical beginning of the task and define its logical conclusion. That is, the staff should know what the priority work is, where it begins, and how it is finished.

Once you have analyzed your practice, had your staff's involvement in the process and the manual has been completed and tested, you are ready for daily implementation of a tool which will render you greater control over your practice. Without question, the value derived from time spent now in developing your office manual will serve you well for many years to come.

During the first four months of the year, the AMA presented testimony or statements on 39 occasions and on numerous issues before Congress or federal executive agencies. The subjects ranged from cost containment to recombinant DNA and from the confidentiality of medical records to nutrient labeling for food products. In 1978 the AMA testified or submitted statements on 94 occasions.

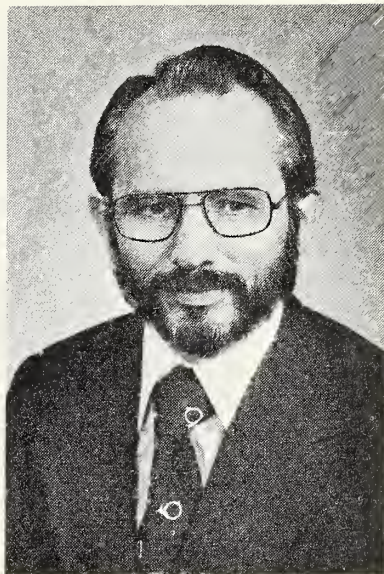
The President's Message

The 1979 Annual Meeting of the Kansas Medical Society is now history. Those of you who missed the meeting, missed a good one. The Reno County Medical Society and Auxiliary are to be congratulated for the excellent organization of the meeting; the facilities were superb and the service was excellent; the scientific session, "A Day of Clinical Cardiology," was well attended and received; the House of Delegates sessions went well, and the Reference Committee, under the chairmanship of Dr. Ivan Rhodes, performed admirably.

The professional camaraderie of the state Society meetings is certainly one of the highlights of the medical year, and I urge each of you to be a part of it in 1980.

Most committee appointments have now been made for the upcoming year. The total number of committees and commissions has been reduced, so those that are active will be working hard. If you have an interest in any facet of the Society's committee work and would like to participate, please let me know. We need your ideas and involvement to continue to meet the new challenges placed before us.

One committee each of you can take an active role in locally is the committee of your hospital staff which is looking at hospital costs. The Voluntary Effort is urging all hospitals to critically examine every aspect of hospital operations — from maintenance and administration to direct patient care — to determine if costs can be held to the minimum consistent with quality care. If your hospital does not have such a committee yet, be instrumental in its



formation. The success of each hospital at holding down costs will determine whether or not there will be increased government regulation under the banner of cost containment in the immediate future.

Possibly your greatest contribution to keeping government out of our hospitals and practices is responsible involvement at the local level.

Fraternally

Donald D. Gering, MD

President



Editorial COMMENT

What Price Melancholy?

The Editorial Board is provided occasionally with items of medical communication for its critical review, not, it must be said, without hope of the provider for a favorable and publicized reaction. Such is the case with a film, "Workshop on Hypochondriasis," produced by members of the Scott and White Clinic of Temple, Texas, and reviewed elsewhere in this issue by Dr. Richard Greer. Though we haven't seen his comments at this writing, the board reaction was favorable so we are happy to advise that the film can be obtained for showing and, furthermore, comes equipped with a self-administered test for CME credit — with, of course, the appropriate fee. (Don't call us — call them.)

The peculiar circuitry of our mind, however, is apt to take us in directions not frequented by normal mortals and during the viewing of the film, being undistracted by auditory stimuli, we found our thoughts turning to the popular subject of the day, cost containment. While we suspect the producers of the film did not intend to inspire an economic reaction to a clinical subject, we came to the conclusion that there was a valid case for exploring the more-than-casual relationship between the two subjects.

It may require a little specialized orientation. First, we must keep in mind that every physician since Imhotep has been supplied with what he deemed to be more than his share of hypochondriacs and has considered himself an expert in every phase of the matter except getting rid of them. Through the ages, no medical entity has maintained its characteristics so unchanged and therapy-resistant as this one — portrayed by artists, dramatists and poets, and recorded in every age and culture. If, then, this durable and ubiquitous patient has commanded so much attention of so many physicians over so long a time, what is his contribution to the health care bill (beside, that is, his disquieting effect on the medical disposition)?

On the other hand, while the origins of hypochondriasis are lost in the mists, cost containment is just shedding its vernix. The physician who, in the past, has dominated the health care scene has presumed that: (1) care of the patient was paramount; (2) his interpretation of what the care should be was inviolable; and (3) cost consideration was a crass intrusion into the sanctity of his purpose. Until recently, he has been supported in this attitude by the patient, the family, and society in general — before it was saddled with a large share of the bill. If hypochondriasis hasn't changed, medical economics has and has spawned new concepts and terminology which are a boon to lay commentators since they bestow an imposing obscurity on what is being said. For example, the term "cost containment" requires some consideration of just what this cost is that we are containing. The dollar value assigned to health care costs varies according to the user and his purpose. Usually, it is reported as an astronomical number which most of us outside of Washington can't even comprehend. Increases are given in additional astronomical numbers while decreases, if any, are reported in fractions of one per cent which induce the same sense of futility that comes with getting on the scales after a week of rigorous dieting.

It is repeatedly stressed that the physician is primarily responsible for the increase in health care costs (not the patient or the illness), is getting rich from it, and should therefore be the prime contributor to cost containment. (Once again, that workhorse of political persuasion: do it or we will do it for you.) While physicians don't feel totally responsible for a figure that combines so many political and social as well as professional factors, it is not our intent here to introduce another querulous diatribe against the profession's critics. Rather, we are interested in those efforts the profession is making to improve the situation. At this particular time, cost containment enjoys an almost sanctified state that

one criticizes only at risk of FBI investigation or having one's credit cards revoked. The need to hold down medical costs is an idea that has met with more general acceptance than anything since it was moved and seconded to eat the apple. But medical costs will not yield to easy solution since they have resulted from a combination of technologic changes in transportation and communication, with their influence on the mechanics of medical practice and logistics not to mention public behavior, changes in physician performance and patient expectations, social and political alteration in all facets of living (particularly in the patterns of family function), climaxed by several wars and inflation.

Nevertheless, the heat is on the medical profession. Presumably, the government wants to alleviate things but has yet to come up with an idea that doesn't offer the probability of making matters worse. The only certainty is that there is not going to be any single large reduction. As with taxes, everyone wants them cut but doesn't want to give up what he is getting out of them. With their emphasis on the voluntary approach, the medical profession's efforts toward cost containment, therefore, lack any dramatics. Instead, they have been directed toward increasing the physician's awareness of those costs in which he is the potent — if legitimate — factor, beginning in medical school. Thoughtful application of professional acumen is promoted to curb or replace dependence on ancillary services. Increasingly, we will be pondering the question of extending hopeless life — in terms of principle and compassion but with undertones of economics. There is an effort to bring into perspective the role of insurance and the physician's obligation to educate the patient as to expectations and efficient use of available services in the hope of eliminating the prostituted usage which has developed with the "insurance-will-cover-it" attitude. Governmental efforts to perpetrate controls and restrictions incompatible with good medical service can be countered only by demonstration of the profession's ability to provide the controls as well as the service.

So a case can be made for the hypochondriac's personifying many of the factors that have created this economic monster. His medical demands encompass the full horizon of medical care — at the very least, the physician's time and energy, both of which could be utilized to greater effect and reduced cost if they weren't being dissipated in that direction. Consider the numerous attempted but ultimately ineffective therapies, the duplicated diagnostic efforts leaving a trail of puzzled or frustrated physicians. If the expense of the hypochondriac's care seems to be

minimal as related to some of the sophisticated and expensive procedures of the day, consider the factor of volume. It would take a lot of hypochondriacs to account for the financial outlay of a coronary by-pass or organ transplant, but that's what we have — a lot of them. Increasingly expensive testing and therapies are just as expensive when applied to the hypochondriac (whether through uncertainty or desperation) as they are for the organically ill patient.

This unhappy patient seldom exists in the pure state. Even those who do can have organic illnesses (and, in the event, are generally delighted) — and it is the necessity to be sure that such is not the case that accounts for a sizeable contribution of the hypochondriac to the health care bill — the original defensive medicine. Moreover, most of us are hypochondriacs to some extent, and few patients are so well balanced at the moment of their illness that their medical bill will not include some amount engendered by accommodating to the emotional stresses of the event.

Perhaps we are moving toward a concept of medical care that offers some promise. It is becoming medically fashionable to consider every aspect of the patient as well as his immediate complaints — holistic medicine, it is called, giving it at once a connotation of entirety and sanctity, and you'll have to admit that pretty well covers everything. How this extended and all-inclusive approach is going to be accomplished without adding to the cost of medical care remains to be seen, but if the practitioners can make inroads on the problem of hypochondriasis, they may call it anything they want.

Our intent is not as frivolous as this treatment of the subject may imply, for basically we are concerned with two significant failures of the medical profession. On the clinical side, it has failed to develop any lasting resolution of the problem of the hypochondriac — if there is any. The condition, for all it may have burdened the medical community, is not, by definition, life-threatening and has been shunted aside usually in favor of more comfortable challenges or rewarding efforts. No foundations or societies devoted to its eradication will be found promoting money-raising groanathons, and any physician devoting his professional life to hypochondriacs would surely become one.

On the economic side, the expense of medical care has been given insufficient or ineffective consideration. Too often, medical care has been applied with an attitude that anything for the patient's welfare was justified without real effort to economize safely and legitimately. (Isn't there some parallel with the

(Continued on page 392)

INSTITUTE ON THE ART OF NEGOTIATIONS

October 13-14, 1979

Hilton Inn, Salina

13 hrs CME Cat. I

Fee: \$50

The Konsos Medical Society, in cooperation with the American Medical Association, and under the direction of J. Poige Clousson, J.D., Director of the AMA Department of Negotiations, is pleased to offer a day-and-a-half seminar in the development of the art of negotiation.

Why You Should Develop the Art of Negotiation

Consider —

that medical care is no longer between just physician and patient. You are compelled to relate to federal, state and municipal government agencies, to hospital boards and administrators, to insurance carriers, to your peers and to consumer groups.

Consider —

that skillful negotiation can bring about solutions to many problem areas.

Consider —

the advantage of avoiding self-defeating negotiation styles such as responding to accusations with denial, defensiveness, or offensive criticism.

Consider —

developing talk skills such as assertiveness, trade-off statements, workable compromise.

About the Course

In a step by step how-to program, consisting of presentation, full participation, questions and answers, and a session in which you act as a member of a negotiating team, you will learn the rules, secrets and techniques of skillful negotiation. This how-to-do-it program focuses on increasing awareness on styles of negotiating, confronting others constructively, defining a conflict constructively, getting an accurate perception of the other's position and feeling, making sure there is correct and effective communication in a conflict, developing a climate or atmosphere for negotiations, and structuring issues and strategies in resolving the conflict. It will enable you to choose a negotiation style that suits your own personality.

Course Materials

Each participant will receive a workbook designed to incorporate notes with printed material. The workbook will contain all the materials used, including outlines of each main topic, reference materials, cases and problems. It is a vital part of the program and is one ingredient in the systematic learning approach used to make the experience optimal. You will use this workbook time and time again in all your future negotiating.

The Seminar will be a day and a half in length, beginning promptly at 8:30 AM the first day, and ending at about 1:30 PM the second day. You should plan to arrive the night before the seminar begins. A block of hotel rooms have been set aside, and you should contact the Hilton Inn directly for room reservations. (Hilton Inn, 5th and Iron Streets, Salina. Phone: 913/827-0461.)

The registration fee of \$50 must accompany your registration. The fee is used to offset the cost of program materials, faculty expenses, and meals.

The program is approved by the AMA Council on Continuing Physician Education for 13 hours Category I CME Credit for the Physician's Recognition Award of the American Medical Association.

Please complete the registration form below and return with your check.

TO: The Kansas Medical Society

1300 Topeka Avenue
Topeka, Kansas 66612
Phone: 913/235-2383

Please register me for the Negotiations Seminar on October 13-14, 1979, at the Hilton Inn in Salina. Enclosed is my registration fee of \$50.

Name: _____

Address: _____

Phone: _____

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	(913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission ..	(913) 362-4040
Roy Neil, M.D., Hays	(913) 628-3215
George M. Penn, M.D., Topeka	(913) 234-9566
Ivan Rhodes, M.D., Wichita	(316) 685-1291
Alex Scott, M.D., Junction City	(913) 238-2518
M. C. Spencer, M.D., Topeka	(913) 234-3451
Max Teare, M.D., Garden City	(316) 276-7689
Virginia L. Tucker, M.D., Lawrence	(913) 843-3750
Kermit Wedel, M.D., Minneapolis	(913) 392-2144
Kansas Medical Society, Topeka	(913) 235-2383/235-3619

They Were There

1979 Annual Meeting, Kansas Medical Society Hutchinson

(Through the courtesy of Jack R. Cooper, Shawnee Mission, the Intrepid Photographer.)



Madame Representative: Rochelle (Mrs. Bert) Chronister, Kansas Representative from the 9th District (Neodesha), and member of the KMS Auxiliary, urges her husband's fellow physicians to invade the political arena.



One who dared: Jimmie Gleason, Chairman of the Legislative Committee, reports on its efforts on behalf of Kansas medicine and, not incidentally, of Kansas Citizens.



Cogs in the medical machinery: Bill Rial, of Swarthmore, Penna., Speaker of the AMA House of Delegates, gets a vote of approval from Don Goering, incoming president of KMS; Bill Walker, treasurer; Alex Scott, KMS delegate to the AMA; and Warren Meyer, outgoing (in more ways than one) president of KMS.



Exercise in nostalgia: KMS past presidents scan the book devoted to that ilk hunting for guess-whose-pictures.

William Y. Rial, Speaker of the AMA House of Delegates, presents to Tom Taylor an AMA Memorial Resolution honoring Tom's brother, Gen. Richard R. Taylor, late Surgeon General of the United States Army and honorary member of KMS, as Warren Meyer, President of KMS, looks on.



Workhorses of the House of Delegates: Reference Committee Chairman Ivan Rhodes, with Frank Bichlmeier, Chairman of the newly established Judicial Committee, struggle through the wonderland of resolutions.



Sally Goering bestows on the new KMS President a look of approval, which we hope will survive the year.



Smiles of innocent anticipation and exhausted relief: Kathy Wedel, incoming president of the Auxiliary, and Jean Crouch, outgoing president —

— as Dave Gray makes yet another futile attempt to exercise his option for the last editorial word. (Skullduggery by *V.B.* and *E.B.*)

**1980
STATE MEETING**
May 2-4, 1980
Glenwood Manor
Shawnee Mission, Kansas



Official Proceedings

1979 Annual Meeting of the House of Delegates

Transactions of the 120th annual session of the Kansas Medical Society are published in this issue of THE JOURNAL.

The resolutions are printed in numerical order under the Minutes of the Second House of Delegates meeting. Those resolutions which were not adopted but which were referred for further study or information are so indicated. The resolutions which failed to pass are retained in the official minutes at the Executive Office, but are not recorded here.

FIRST SESSION

The first session of the House of Delegates of the Kansas Medical Society met on Friday, May 4, 1979, beginning at 9:00 AM, at the Holiday Inn Holidome, Hutchinson. The meeting was called to order by Clair C. Conard, M.D., Speaker, who introduced James W. Shaw, Jr., M.D., President of the Reno County Medical Society.

Dr. Shaw welcomed the delegates to Hutchinson on behalf of the Reno County Medical Society, and extended an invitation to all delegates to attend the activities throughout the meeting. Dr. Shaw then introduced JoAnn Shrag, R.N., Mayor of the City of Hutchinson.

Mayor Shrag welcomed the delegates and spouses to the City of Hutchinson, and invited everyone to enjoy the various facilities available in Hutchinson. Mayor Shrag related that she is the first woman mayor elected in the City of Hutchinson, and that she is employed in the medical office of John N. Blank, M.D.

Dr. Conard briefly reviewed the order of business and explained that the House was composed of elected officers, all past presidents, Councilors, representatives of specialty societies, and the duly elected delegates from the component medical societies. He stated that the House would follow the *Sturgis Standard Code of Parliamentary Procedure*.

Dr. Conard then introduced the officers of the Society, as follows:

Warren E. Meyer, M.D., Wichita, President.

Donald D. Goering, M.D., Coldwater, President-Elect.

Phillip A. Godwin, M.D., Lawrence, First Vice President.

Herman W. Hiesterman, M.D., Quinter, Second Vice President.

William K. Walker, M.D., Sedan, Treasurer.

Jack R. Cooper, M.D., Shawnee Mission, Secretary.

Alex Scott, M.D., Junction City, AMA Delegate.

Clair C. Conard, M.D., Dodge City, AMA Delegate.

Lew W. Purinton, M.D., Wichita, AMA Alternate Delegate.

Kermit G. Wedel, M.D., Minneapolis, Alternate AMA Delegate.

The presence of a quorum was announced.

Upon the motion by Jack R. Cooper, M.D., Constitutional Secretary, the minutes of the 1978 annual meeting were approved by acclamation.

The following Tellers were appointed: Drs. Asher W. Dahl, Colby; Herbert M. Nason, Kansas City; Corky R. G. Trotter, Minneola.

William Rial, M.D., Speaker of the AMA House of Delegates, presented a memorial resolution for Richard R. Taylor, M.D., Surgeon General of the United States Army, to his brother, Thomas F. Taylor, M.D., Salina.

Dr. Rial, a Family Practitioner from Swarthmore, Pennsylvania, addressed the House and expressed concern at the increased intrusion of government into the practice of medicine. He emphasized that the most important obligation of any medical society is to increase its membership at all levels, so that medicine would be adequately represented before government.

Dr. Rial also explained the AMA position on national health insurance, stating that an AMA bill on NHI would be introduced only if deemed absolutely necessary and that such a bill would follow the four principles adopted by the AMA House of Delegates. Dr. Rial emphasized that hospital cost containment is a very significant issue at the present time. He briefly reviewed the chiropractic issue and the Pennsylvania lawsuit settlement. He also indicated that the AMA is currently revising its Code of Ethics to remove the language with possible anti-trust implications. Dr. Rial encouraged the delegates to become more involved in the activities of the Society.

Mr. Mike Harper, Administrative Assistant to Senator Nancy Kassebaum, briefly addressed the assembly and stated he would be available through-

out the day to discuss any item of interest with physicians.

Mr. Bud Wright, Director of AMA Department of Federation Communications, was introduced to the assembly. He stated that he would be present throughout the session to answer any questions.

The Treasurer's Report was presented by William K. Walker, M.D., Sedan, Treasurer. Copies of the report were distributed to every member of the House. Dr. Walker reminded the members that dues have been raised to \$150 for fiscal 1979.

Representative Chronister, Neodesha, in addressing the House, stated that as a physician's wife, she does have some knowledge of medical issues. Mrs. Bert Chronister stressed the need for personal involvement of physicians in the legislature. Paid lobbyists alone cannot do the job; it is very important that the physicians help get the medical profession's point of view to their legislative representatives. There is a need to provide testimony when requested and to show the effects of laws, rules and regulations on the cost of medical care. Representative Chronister encouraged physicians to provide financial as well as voluntary support to their legislators.

In concluding the Editor's Report, Dr. Gray presented Dr. Meyer with a bound volume of *THE JOURNAL* for the President's term 1978/79. Dr. Meyer in turn presented the Editor with a bound volume of *THE JOURNAL* for 1978.

Emerson D. Yoder, M.D., Denton, Chairman of Mediserve, Inc., reviewed the history of the organization, which was incorporated in May 1977. The program is to provide loans to medical students who agree to practice in rural areas of Kansas. In its first year of operation, Mediserve received 36 applications, 28 of which were recommended for admission to medical school and 17 of which were accepted. In its second year of operation, 28 applications were received, of which 20 were recommended for admission with 15 accepted to date. The program is funded by contributions from the Kansas Medical Society and the Kansas Farm Bureau, each for \$10,000 annually. Additional funding has been provided by county farm bureaus, each for \$100. Dr. Yoder indicated that the organization will be requesting county medical societies to contribute \$100 each toward the Mediserve fund.

Kermit G. Wedel, M.D., Chairman of the Public Affairs Committee, briefly reviewed his written report to the House, indicating that the Committee is soliciting local input and is attempting to establish contacts in each component medical society for dissemination of information.

Frank G. Bichlmeier, M.D., Chairman of the Ju-

dicial Committee, also briefly reviewed his written report, indicating that the current system with the 19 Council districts is cumbersome and unworkable in handling discipline problems in the state. The Judicial Committee would be established to assume that function with multidisciplinary representation. As with the current system, problems would be handled at the local level first, and if unresolved there, would then be submitted to the state Judicial Committee.

Primary election results were reported as follows: for the office of Second Vice President — Millard C. Spencer, M.D., Topeka, and Kermit G. Wedel, M.D., Minneapolis.

The Speaker announced the following appointments to the Reference Committee: Drs. Ivan E. Rhodes, M.D., Wichita, Chairman; Frank G. Bichlmeier, Kansas City; Herbert Fransen, Newton; Millard C. Spencer, Topeka. Dr. Conard invited all delegates and Society members to attend the deliberations of the Reference Committee.

The House heard the following reports, after which the session was adjourned at 11:45 AM.

Legislative Committee — Jimmie A. Gleason, M.D., Chairman

The 1979 legislative session was a difficult one to get a handle on. As a result of last year's elections, the Republicans regained control of the House of Representatives, thus we had to begin all over working with new committee chairmen and new leaders.

We were very fortunate to have Representative Roy Ehrlich appointed Chairman of the Public Health and Welfare Committee of the House, as Roy has a keen understanding of health issues and he conducted his committee admirably. In the Senate, Public Health Committee Chairman Wesley Sowers again did a masterful job in riding herd on health legislation which passed through the Senate. Without the help and support of these two fine men our legislative session could have been much different.

As it was, the legislature did not enact any legislation that we strongly opposed. We joined the Kansas Hospital Association in opposition to the Hospital Cost Containment bills, and even though there were several attempts to enact such legislation, none were successful. However, we fully expect to see some form of hospital prospective rate and budget review next year if the private program of Blue Cross and KHA is not universally accepted by all hospitals.

Among the bills that were defeated which we opposed, was SB-62, a bill that would have extended Certificate of Need requirements to physicians' offices. Although the bill is dead this year, we expect

to see it reintroduced again next year.

Also not passed this year was SB-328, a bill that would have prohibited physicians from owning any part of a laboratory or pharmacy. The author of the bill indicates he will push for enactment of the measure again next year.

None of the bills that would have provided for increased practice privileges for many of the allied health groups became law this year. All of the proposals, including allowing chiropractors to withdraw blood, licensing independent corrective therapists, licensing speech pathologists and audiologists, etc., were not passed and will be held over until next year. In the interim, a study will be made of the proposed system of credentialing health care personnel, which we support for the most part. The bill would establish a system of reviewing and assessing the merits of requests for licensure or expanded privileges by all health care groups, and with some clean-up amendments, we feel the bill is one that should be enacted next year.

Only one of all the malpractice bills which were introduced was passed this year. SB-58, a bill that strengthens the screening panel law, was enacted by the legislature, but the companion bills which we supported did not see the light of day. Bills relating to confidentiality of hospital committee proceedings, redefining the locality rule, and recovering attorney's fees in certain malpractice actions did not go anywhere in the trial lawyer-dominated Judiciary committees. An effort will be made next year to try to get these bills moving.

Among the bills of medical interest which were enacted by the legislature this year were the following:

SB-9 — This bill would make the obtaining or possession of a prescription-only drug by fraudulent means a crime. For the first time in this state it would be against the law to steal or forge a prescription with the intent of obtaining controlled substances.

SB-44 — This bill repeals a prohibition on Blue Shield and Blue Cross from owning, controlling, or investing in HMOs. The intent of the bill is to encourage HMO development wherever possible.

SB-58 — This bill amends the screening panel law to provide that when either one of the parties in a malpractice action requests a screening panel, the judge shall convene it. The intent of the bill is to get broader usage of the screening panels, thus hoping to keep more suits out of the expensive courtroom.

SB-99 — This bill would provide a method whereby terminally ill patients could have any extraordinary life-sustaining efforts discontinued so that the patient could die a natural death. It is a

complex bill which goes to great lengths to protect rights of patients, physicians, hospital personnel and others who are involved in such situations. Additionally, no person, including physicians and health care personnel, are required to participate in the withholding of such life-sustaining procedures.

HB-2007 — This bill contains several technical amendments to the Healing Arts Act, and one amendment that makes it clear that physicians who dispense drugs from their offices must comply with all drug laws. The intent of this amendment is to assure that "dispensing physicians" meet minimum standards adopted by the Board for the packaging, compounding and sale of controlled substances.

HCR-5036 — This resolution by the legislature encourages local school boards to establish training programs in cardiopulmonary resuscitation (CPR). This measure originally started out as a bill requiring school boards to establish such programs, but because of cost considerations, the legislature changed it to a resolution encouraging such programs.

We anticipate several interim studies of interest to medicine this year. Among those we expect are the study of the credentialing bill, a complete review of the coroners' laws, and a continuing look at health care costs.

The final 1979 KMS Legislative Bulletin will be sent out to all KMS members next week. It will include complete summaries of all bills of medical interest enacted this year, and a listing of bills that will be held over for consideration next year.

I would like to express my deepest gratitude to all the members of the Legislative Committee. They spent many hours this winter meeting at the KMS office discussing legislation and defining our positions on all the bills we followed. They are a hard-working group and deserve all of our thanks.

If there is anything we can do, or if you have any questions relating to any of the legislation, please give me or Jerry Slaughter a call at any time.

KaMPAC Board of Directors — Ronald Davis, M.D., Chairman

What has KaMPAC done for you lately?

KaMPAC has a two-year life cycle. This cycle begins with the most crucial phase — membership support — which is a continuing effort. Political trends are observed along with voting record tabulations keeping KaMPAC up to date. As the filing deadline is passed, extensive candidate evaluation forms are completed followed by endorsement decisions and disbursement of funds in a timely manner. The election then brings on the last phase — evalua-

tion of performance and informing the membership of such.

Through this process, KaMPAC has increased government's awareness of our needs and has shown our desire to improve government.

Please support KaMPAC by becoming a member so that KaMPAC can help you by improving government through participation of the medical community in the electoral process.

**KMS Auxiliary —
Jean (Mrs. William H.) Crouch, President**

The time has come in our year when we must evaluate goals and accomplishments. We have made an honest and concerted effort to concentrate on long range, ongoing programs that will be beneficial to any community. With this goal in mind, we chose to emphasize health education for children and youth. The Learning Center on Body Pollution for fifth and sixth grades, providing education on drugs, alcohol, tobacco and nutrition, had been extremely successful in Wyandotte County, so this was our starting point. Last year a traveling center for the state was constructed and put into circulation in September 1978. Requests for this learning tool have been so numerous that one center cannot meet the demand. Therefore, subject to the approval of our General Session, we plan to build one or two additional traveling centers to be operational by September 1979. We have even had a request from the Junior League of Reading, Pennsylvania, for permission to copy the Learning Center.

The need for health education certainly does not stop at the elementary school level. To meet this need we have introduced a program for high school students called SCORE — Student Council Offers Responsible Education. Designed by a Texas March of Dimes volunteer, this program is used widely in that state and has been adopted by the National Student Council. It is a peer education program that can be promoted by any active organization in a school, and presents factual information on drugs, alcohol, tobacco, nutrition, venereal disease, virus infections, and genetics. It has taken most of the year to lay the foundation for this program, but it has been designated as an ongoing program and will be operational in the fall.

At both the state and county levels, we have been active in AMAERF, membership, legislation, and international health activities. Our 1300 members — composed of 28 component auxiliaries plus members-at-large — have served their individual communities in many ways. Briefly, some of their activities — individually and collectively — have

been: hospital auxiliaries, legislation, blood bank programs, Meals on Wheels, emergency service council, international health activities, preparation of hygiene kits, presentation of baby sitting classes; educational programs on child abuse, medical mariages and the hospice concept; fund raising events to produce revenue for scholarships, hospital equipment and AMAERF; and service projects such as painting murals on the walls of a hospital pediatric unit or providing birthday parties and other services to nursing home residents.

We have had a liaison committee to the KMS Impaired Physician Committee. Under their direction, a questionnaire designed to guide us in education and program development was sent to all Auxiliary members. Over 500 were filled out and returned to us. This, incidentally, was an anonymous questionnaire. Workshops were held at the summer board meeting, and two workshops were held in October on health education, AMAERF, legislation, membership, and the Impaired Physician program. Obviously, I get on my soap box when I talk about Auxiliary members. They are dedicated, caring, and giving people.

I promised the physician in my house that I would be brief. However, I would be negligent if I failed to say a big THANK YOU to all of you for the support you have given us each year. Your Executive Committee has worked closely with us and the KMS Staff has been helpful above and beyond the call of duty. We are your Auxiliary, and our purpose is to assist you in any way you may deem advisable or appropriate — so don't hesitate to call on us. We like being a part of your professional life.

It has been an honor and a privilege to serve as president of the Kansas Medical Society Auxiliary, and I am very proud to be a physician's wife and a Kansan.

**Constitutional Secretary —
Jack R. Cooper, M.D.**

This is the Membership Report of the Kansas Medical Society for 1979:

Dues Paid Members	2,258
Resident Members	25
Emeritus Members	118
Personal Exempt/LOA Members	29
Retired Members	163
Service (Armed Forces) Members	8
Student Members	10
Honorary Members	3
Delinquent Members	262
Total	2,876

This compares with the membership in previous years as follows:

1971 Total Membership	1,990
1972 Total Membership	2,003
1973 Total Membership	2,033
1974 Total Membership	2,078
1975 Total Membership	2,137
1976 Total Membership	2,205
1977 Total Membership	2,267
1978 Total Membership	2,627

Necrology Committee —

David E. Gray, M.D., Chairman

At a time when technology and foreign intrusions threaten to destroy the physician's role in the medical scene, the death of a colleague rededicates us to our traditional purpose and reminds us that the death of a physician touches the lives of others as does no other death.

Name and Address	Age	Date
George L. Ashley, <i>Chanute</i>	65	May 6, 1978
Harwin J. Brown, <i>Winfield</i>	69	Feb. 1, 1979
Margaret Clark, <i>Lawrence</i>	67	July 14, 1978
Shirley E. Clark, <i>Topeka</i>	63	July 23, 1978
Truman W. Grauel, <i>Wichita</i>	37	Jan. 3, 1979
John L. Grove, <i>Newton</i>	97	Feb. 10, 1978
Thomas C. Hurst, <i>Wichita</i>	64	July 22, 1978
Paul A. Kaelson, Jr., <i>Wichita</i>	61	Dec. 24, 1978
James Marr, <i>Coffeyville</i>	57	Jan. 10, 1979
Roscoe F. Morton, <i>Arkansas City</i>	65	Oct. 30, 1978
Henry S. O'Donnell, <i>Ellsworth</i>	85	Sept. 6, 1978
Leonard F. Podrebarac, <i>Wichita</i>	54	Dec. 23, 1978
Robert K. Purves, <i>Wichita</i>	60	Jan. 6, 1979
A. K. Ratzlaff, <i>Goessel</i>	71	Feb. 7, 1978
Marion J. Renner, <i>Goodland</i>	82	July 8, 1978
Corbin E. Robison, <i>Lawrence</i>	64	Feb. 5, 1979
Charles R. Rombold, <i>Wichita</i>	79	Dec. 18, 1978
Ward W. Summerville, <i>Kansas City</i>	81	Dec. 31, 1978
Wayne O. Wallace, Sr., <i>Atchison</i>	65	Sept. 27, 1978
Ray A. West, <i>Wichita</i>	86	Dec. 9, 1978

Editorial Board —

David E. Gray, M.D., Chairman

Buried among your papers, you will find the financial report of the *Journal* with its happy though subdued message of continued solvency. The *Journal's* fiscal state remains sufficiently positive to indicate survival but not so bountiful as to encourage embezzlement. In terms of professional content, I have always assumed that the *Journal* made its own report through its monthly appearances on your desks. This continuing exposure should demonstrate its professional service better than an annual summation by me which would inevitably be self-serving. I can report, however, that our supporters have been gracious and our detractors have been quiet, and that's not a bad year.

One change in the Editorial Board has been appar-

ent to those who read the masthead faithfully. Because of his departure from the Wichita branch of the medical school, Cramer Reed resigned his position as Associate Editor. His service, not only in developing the annual Wichita branch issue of the *Journal* but in his interest and advice as well, has been greatly appreciated. Dr. Richard Manning graciously accepted our invitation to assume this position, and we hope the relationship will prove as enjoyable and rewarding for him as it will be for us. As an associate editor, he joins Jesse Rising who, for many years, has filled the same role at the Medical Center in Kansas City. It occurs to me that Jesse has never received appropriate recognition for the quality and sincerity of his efforts on behalf of the *Journal*, so let this be recognition and thanks to him — without, of course, implying any increase in pay.

During the year, the *Journal* was offered the opportunity by one of its commonwealth neighbors to join forces with a couple of others in consolidating into a regional journal. Overcoming a residual distrust of border ruffians, the Board in solemn council pondered the matter, as it has on several occasions in the past, and was able to formulate a polite refusal and still have time for a Reuben sandwich. Our undercover agents were able to ascertain that the offer was inspired more by the financial tribulations of our suitor than any predictable qualitative improvement and whatever our need of the latter, we decided we had enough of the former without any help.

In the kudos department, I want to mention our editorial assistant, Eleanor Bell, who has earned a secure place in the *Journal* office by force of both ability and personality. Her management of the technical preparation of the *Journal* and capacity for detecting the errors that are constantly lurking in an editorial office have been greatly appreciated. It is my intention at this time *not* to refer to the managing editor, Val Braun. In times past, I have commented on her loyalty, her industry, her innate qualities of social and literary taste, her fabulous energy and productivity, and the fact that she does my work for me. She has always demurred from my efforts to praise her, thus adding modesty to her many virtues. So, enough already. I'm not going to say anything about her. But lest the business manager succumb to a fit of pique if he is not recognized, and refuse to countersign the checks, let me say of him that he is the very best we have.

In the past, I have relied on brevity as a device for gaining a favorable reception to my reports, but today feel compelled to extend my time long enough to call attention not so much to things past as to

evidence of things to come, which have a disquieting if not evil portent for the *Journal* as well as the Society.

Item: The Postal Department has proposed an increase in rates which will be hazardous to the health of many journals, their survival depending upon the availability of the generic antidote. You get the message.

Item: As you well know, the Federal Trade Commission, with the fervor of a missionary band which has just discovered an uncharted island full of heathens, has embarked upon a program to bring the blessings of bureaucracy to the medical profession though the profession had considered its supply already overwhelming.

Item: The Internal Revenue Service has recently notified the American Chemical Society, the American Institute of Physics, and the publishers of the large majority of their publications that it is removing their tax exempt status. The financial effect on scientific publishing is obvious and scientific communication cannot help but suffer. You are reminded of its assessment against the AMA — and the end is not in sight.

Item: In what must be a fit of sibling jealousy, the Interstate Commerce Commission is examining the AMA publications structure, and we doubt if it is just an abiding interest in continuing medical education.

As you also know, your deliberations here, as well as at future meetings, will be largely necessitated and directed by such actions and attitudes of a benevolent government. As you proceed, be sustained by this message from the Editorial Board: Have a good day.

The Kansas Foundation for Medical Care, Inc. — Louis M. Culp, M.D., President

The Kansas Foundation for Medical Care initiated the delegation of PSRO review to hospitals on April 1, 1978. As of May 1, 1979, the KFMC has delegated 102 acute care hospitals in Kansas. This represents 67.1 per cent of the number of hospitals in the state, and 69.0 per cent of the acute care beds. As of June 1, 1979, the KFMC will have delegated PSRO review to 112 hospitals. This represents 73.6 per cent of hospitals and 76.0 per cent of acute care beds.

The KFMC, as of May 1, 1979, has 1,431 physicians as members.

The KFMC is directed by a Board of Directors composed of 27 physicians. In addition to the Board, the KFMC has several committees to aid the KFMC in carrying out PSRO implementation. Those committees are: steering, education and criteria, data, delegation, medical care evaluation, and an advisory group composed of two physicians and nine non-physician members. There are several positions on these committees left to be filled, and physicians interested in taking an active role in PSRO implementation by serving on one of these committees are urged to contact the KFMC office.

The Board of Directors met early this morning and the following officers were elected for the coming year: Culp as President; Richard Glover, Newton, Vice President; L. William Halling, Hays, Secretary; and George Learned, Lawrence, Treasurer.

On April 1, the Foundation began operating under a one-year federal grant. The KFMC is the first PSRO in our region to move from the federal contract mechanism to the federal grant mechanism. The amount of the grant for the coming year is \$1.6 million, about half of which will be channeled through our office.

During this grant year, the KFMC will continue the delegation process and we anticipate having all Kansas hospitals under some type of PSRO review process by fall 1979. In addition to the delegation of hospitals, the KFMC plans to implement review in the seven specialty hospitals in Kansas and to initiate a system of focused review.

The KFMC presently has 15 staff members and they have been performing in excellent fashion during the past year. It is interesting to note that the KFMC staff is one of the smallest in the country, while the Kansas PSRO is at present the largest conditional PSRO in the country by virtue of the number of acute care hospitals. The staff has conducted numerous training sessions throughout the state during the past year in addition to mini-training sessions in several individual hospitals. There will be six additional training sessions in Kansas during June, and anyone who is interested in attending one of these training sessions should contact the KFMC office.

I have had the opportunity to speak to several medical staffs throughout the state during the past year; and additionally, I have made several presentations to groups and associations who have expressed an interest in PSRO. It is the expressed intent of the Board of Directors that the Kansas PSRO program should reflect the input of Kansas physicians. I would, therefore, request your input and cooperation toward that goal.

The President — Warren E. Meyer, M.D.

With the weather forecast coming up yesterday, I know the staff felt the same way — that I had done it again. There were sleet and snow and hazardous driving conditions in southwest Kansas, and after the terrible January we had in which we had to cancel a lot of our meetings that were quite important — the PA meeting, the Long Range Planning Session, and the Council — and after casting rather anxious eyes to the north to see if we could see the glacier, I think it would not be inappropriate for me to say I feel I have weathered my year as President!

This will not be a recounting of the accomplishments nor the problems of the past year. I think Lincoln once said that if you have done something right, it's gonna go by without any notice. If you've done something wrong, a thousand angels swearing that you were right would go unheeded. But, I would publicly like to thank the physicians and members who have made this year successful — members of the committees who worked hard and accomplished most of the work. You've heard some of the reports of the chairmen, but to all those who did work so hard, I want to say I really appreciate it, and the Society is in your debt. Also, the staff was most encouraging, helpful and hardworking, and I think we have an organization we can be most proud of.

I would like to share with you some thoughts that were distilled after meetings with you, the Council district visits, physicians from other states, legislators and various people of different professions, persuasions, and philosophies. Jimmie Gleason has given you an excellent resume of our battles with the legislature, and these are battles. It's a different set of rules and regulations up there — and if after hearing Rochelle Chronister talk you're not convinced of the need for our involvement, then there is nothing further I can say. I would urge you to go back and make a generous contribution to KaMPAC, get to know your legislator, speak out on the issues, give all the support you can to Jimmie and to our staff in terms of legislation.

More importantly, I would like to state that we must remain united. There is no doubt that we must actively resist the divide-and-conquer tactics of the FTC, the Title 18 and 19 programs, HEW, and other governmental agencies in their concerted efforts to control health care costs on the federal level. The 1984 world of Mr. George Orwell has begun. We must stick together. We must ignore the petty differences, the special labels that so often separate us. We must join together to provide a unified front. I personally think the AMA is the proper vehicle for us to

express our views on a national level. I hope that we will go out and talk to our colleagues who are perhaps somewhat disenchanted with the AMA, because the public perceives the AMA as the spokesman of the doctors. The AMA is organized on a grass roots level. Those of us who have been to the AMA House of Delegates meeting are impressed with the fact that everyone gets a chance to speak. It is very democratically done — even a physician who is not an AMA member can talk in a reference committee. I know of no other organization where this is permitted. I don't wish to say that I agree with everything that the AMA has done or probably will do, but I do know that to make a change we've got to become actively involved and become working participants. I think the AMA is worthy of our support, our membership, and our involvement.

Jimmy Gleason spoke to you about Governor Carlin's recent meetings with industrial and business leaders in the Topeka area to determine interest in an HMO in Topeka, and that this does have implications throughout the state. We should carefully and critically examine the entire subject of health care delivery. Just as technology has changed some of our practice methods, we should also test new concepts of health systems against principles that we feel are important and unwise to discard. The luncheon speaker, Dr. Walter McClure, will present one example — an attempt by medicine and business leadership to work out a private approach at the grass roots level to prevent the encroachment of government. There is no doubt that the government regulatory forces will replace market forces if we fail.

The remaining person to be persuaded is the patient. As a medical student, I remember a reporter in the *Chicago Tribune* who said, "We will have socialized medicine when the patients feel that the doctors don't care a damn about them." I am hearing more and more patients openly voice to me concerns they have about talking with their doctors. They can't get to see him — the office staff shunts off their problems and their concerns. A person like this is resentful and can be very easy prey for government propaganda. I think we need to show them that we care about them as individuals with problems — this is why we became doctors. If we don't care to do this, there are many others in the health care field who are anxious to take this over and will help to alienate us further from our patients.

Secondly, I think we need to share more with our patients about their conditions and about their treatment, and without the medical mumbo jumbo that some of us like to invest our talk in. After all, they are putting their lives in our hands and they should,

through courtesy alone, be able to talk to us freely and hear our answers. The benefit may be a happier patient who is more cooperative in his therapy, which means fewer phone calls and trouble for us.

And lastly, I think we need to vary from our regular patterns of practice and challenge some of our old traditions. Some of us have been making the same mistakes for 20 years and calling it experience. Now, we should do this not with the idea of changing just for the sake of change, but to see if things can be done any better, more efficiently and less expensively, with greater benefits to the patient, so as not to discard what is good, but what may only be expedient. I guess, in short what I'm saying is, let's be professional in the best sense of the word — in knowledge, skills, conduct, morals, ethics and in humanity, and with humility knowing our frailties, our limitations, and our shortcomings. The patient's benefit should be the prime motive for our actions.

May I say that it has been a great honor for me to serve as your President. I hope that whatever we have accomplished will serve to strengthen the organization, and to perhaps improve the image of medicine in our community, and work for the benefit of not only ourselves but our patients.

Executive Director — Jerry Slaughter

At this time it is my privilege to give you a brief report from my perspective on the events of the previous year. I am now into my seventh year with the Medical Society, and each year brings new challenges and new problems, and I hope each year I am better prepared to deal with them by virtue of increased experience and understanding of the issues.

The demands placed on the Medical Society change and grow from year to year. In order that we can continue to respond, we must also change and grow. We are currently looking at ways the office can do more work, more efficiently, in these inflationary times. The Long Range Planning Committee has asked us to begin planning for the addition of a staff person to assist with lobbying activities and to upgrade our efforts in the area of public affairs. We will be reporting to the Council later on these subjects and implementing its directives as soon as possible.

This past year seemed awfully short, possibly because it was one of our busiest thus far. The Impaired Physician Program got under full sail, and I believe this effort will pay big dividends in the future. The long awaited — maybe I should say long dreaded — CME law finally took effect, and each of you had to show the state that you were truly keeping

up with continuing education. I don't know where this CME requirement will lead us, but I hope we haven't created a monster.

This year saw renewed interest in HMOs coming from a strange quarter — the Governor's office. The final chapter hasn't been written on whether or not there will be an HMO in Topeka soon, but suffice it to say that HEW is very anxious to speed up local efforts to develop some kind of HMO in our state capital.

This past year our joint project with the Kansas Hospital Association at holding down hospital costs — The Voluntary Effort — got into full swing. I think you can expect a greatly increased level of activity from the Voluntary Effort this year, especially in the area of the physician's role in hospital costs. The issue of rising health costs could make or break us in the next year or two; our ability to get a handle on the problem before government does might be the biggest challenge we face in the near future.

An equally important problem, one that is considerably more subtle, yet clearly as critical, is the growing trend for medicine to be split apart, one specialty against another. Last year there was more than one issue that divided medicine, most notably the debate over chiropractic, and more recently in federal legislation that attempts to single out hospital based physicians for changes in reimbursement policies under Medicare and Medicaid. These efforts, and all efforts to splinter medicine, must be resisted. Once the broad umbrella of organized medicine is destroyed, every physician will be vulnerable. No single specialty group can withstand the continuous, persistent attack on professionalism at both the federal and state levels. In short, it's a matter of professional survival.

This past year a truly fine man served as your President. Warren Meyer is as dedicated and hard working a person as you will ever meet. Our whole organization benefited from his willingness to work and understanding of the issues. It has been a privilege to have been able to work so closely with this man during the year. He represented the Society with distinction.

When you think of the one thing that is indispensable in your practice, you'll know how I feel about our office staff. They keep the ball rolling and the work flowing smoothly on a day-to-day basis. The secretarial staff will be here throughout the meeting and I hope you'll have the opportunity to meet these hard-working, loyal, and very pleasant women. I would especially like to acknowledge the work that Gary Caruthers and Val Braun do for you. I am

extremely fortunate to have such talented and dedicated individuals as associates, and I want you, and them, to know I am truly grateful.

The coming year promises to be every bit as busy as the last, with new challenges and some old problems. Your Society will be in the able hands of Don Goering, who has demonstrated the capacity for leadership and hard work. I'm looking forward to beginning our new year under Doctor Goering's guidance, and am sure it will be a productive twelve months.

In closing, I would like to express my thanks to all of the physicians in this Society who have worked hard throughout the year. Whether on a committee, serving as an elected delegate or officer, or by just being interested, each of you has contributed to make this Society a little stronger.

I consider it a privilege to work for this organization and want you to know that I am very thankful for the opportunity you have afforded me.

SECOND SESSION

The second session of the House of Delegates was called to order by the Speaker, Clair C. Conard, M.D., at 9:00 AM on Sunday, May 6, 1979, at the Holiday Inn Holidome, Hutchinson.

The Speaker placed some rules before the body and announced that *Sturgis Standard Code of Parliamentary Procedure* would be followed at this meeting. Every delegate would be given an opportunity to be heard on every question but except for the person who makes the motion, all delegates were asked to cooperate by being heard only once upon a single question.

Ballots for the election of officers were distributed, and the following results reported:

PRESIDENT-ELECT: Phillip A. Godwin, M.D., Lawrence

FIRST VICE PRESIDENT: Herman W. Hiesterman, M.D., Quinter

SECOND VICE PRESIDENT: Kermit G. Wedel, M.D., Minneapolis

CONSTITUTIONAL SECRETARY: Jack R. Cooper, M.D., Shawnee Mission

TREASURER: William K. Walker, M.D., Sedan

AMA DELEGATE 1980/81: Clair C. Conard, M.D., Dodge City

AMA ALTERNATE DELEGATE 1980/81: Lew W. Purinton, M.D., Wichita

SPEAKER: Clair C. Conard, M.D., Dodge City

VICE SPEAKER: John O. Yulich, M.D., Kansas City, KS

The following results of Council district elections were announced:

DISTRICT 2 — Louis M. Culp, M.D., Kansas City, KS

DISTRICT 4 — Kent J. Cooper, M.D., Pittsburg

DISTRICT 11 — Ivan E. Rhodes, M.D., Wichita

DISTRICT 13 — Wallace N. Weber, M.D., Hays

DISTRICT 14 — Donald E. Beahm, M.D., Great Bend

DISTRICT 15 — Richard L. Brownrigg, M.D., Dodge City

DISTRICT 19 — Robert F. Moore, M.D., Caney

Dr. Conard invited Dr. Don Goering, President, to address the House. Dr. Goering thanked the delegates for their diligent efforts over the past three days of sessions. He indicated that he is looking forward to working with the members during the coming year and solicited any inquiries and criticisms about his administration. Dr. Goering announced that the Council would meet immediately following the adjournment of this session.

Dr. Conard thanked Dr. Rhodes and the Reference Committee members for their efforts in summarizing all opinions on the resolutions. There being no further business before the body, he adjourned the House at 12:30 PM.

An asterisk following the resolution number indicates a change in the Constitution and By-Laws.

RESOLUTION NO. 79-1

General Fund Check Authorization

WHEREAS, The bylaws of the Kansas Medical Society require general fund checks to be signed by the Treasurer and countersigned by the President and Secretary; and

WHEREAS, Presently only the Treasurer signs the general fund checks, therefore be it

Resolved, That the Bylaws Committee be directed to draft appropriate changes to the bylaws providing that the Executive Director of the Kansas Medical Society be authorized to sign general fund checks with appropriate authorization from the Treasurer and that the Executive Director be bonded in an appropriate amount.

RESOLUTION NO. 79-2

AAMA 1980 Meeting

WHEREAS, American Association of Medical Assistants (AAMA) and its affiliated state and local chapters are comprised of employees of

actively practicing physicians; and

WHEREAS, The purpose of membership of this organization is to serve the physician and the patient by furthering education of the Medical Assistant; and

WHEREAS, The Kansas Medical Society supported and encouraged the establishment of AAMA, which organization was initiated by members of the Kansas Medical Assistants Society in Kansas City, in 1955; and

WHEREAS, In commemoration of the 25th anniversary of its inception, the 1980 annual session of AAMA will be hosted by the Kansas Medical Assistants Society and held in Kansas City; therefore be it

Resolved, That the Kansas Medical Society recognize and congratulate the American Association of Medical Assistants on its efforts to provide a continuous professional educational program for its membership; and be it further

Resolved, That the Kansas Medical Society congratulate the members of the Kansas Medical Assistants Society on their accomplishments at the national level; and be it further

Resolved, That the Kansas Medical Society support the 1980 annual convention of the American Association of Medical Assistants with assistance in providing a suitable speaker.

RESOLUTION NO. 79-3

Medical Ethics and Chiropractic

WHEREAS, The current statement of policy adopted by the House of Delegates of the AMA in 1966, is:

It is the position of the medical profession that chiropractic is an unscientific cult whose practitioners lack the necessary training and background to diagnose and treat human disease. Chiropractic constitutes a hazard to rational health care in the United States because of the substandard and unscientific education of its practitioners and their rigid adherence to an irrational, unscientific approach to disease causation; and

WHEREAS, Section 3 of the AMA Principles of Medical Ethics states, in part:

A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle; and

WHEREAS, The Board of Trustees of the AMA, AMA Legal Counsel, and AMA Executive Staff have repeatedly stated that the Wilk Chiropractic case brought in Chicago is different from, and more

important than, other cases involving chiropractors, doctors of medicine, and scientific medicine; and

WHEREAS, The Board of Trustees, AMA Counsel, and AMA Executive Staff have all expressed a determination to fully litigate the issue presently in the Wilk case; and

WHEREAS, Settlement of the Wilk case by the AMA may seriously jeopardize the defense of this case by the other defendants; therefore be it

Resolved, That the Kansas Medical Society request the American Medical Association House of Delegates to direct the Board of Trustees, legal counsel, and executive staff to not enter into confidence or discussions of settlement in the New Jersey and Wilk cases without notifying the other defendants in these cases; and be it further

Resolved, That the Kansas Medical Society request that the Board of Trustees of the AMA join with the other defendants in defense of the Wilk Chicago Chiropractic Suit, regarding the relationship between chiropractors, hospitals and certain referral based physicians, on grounds that settlement is not in the best interest of patients, hospitals, or the future of medical practice; and be it further

Resolved, That the details of any discussion of settlement of the New Jersey and Wilk cases be brought immediately and fully communicated to other defendants in these lawsuits; and be it further

Resolved, That this resolution in its spirit and content shall be placed before the AMA House of Delegates at its next annual meeting and that the Kansas delegates are hereby instructed to support the intent of the foregoing resolution with vigor at that meeting.

RESOLUTION NO. 79-4

AMA Dues Billing and Remittance Criteria

WHEREAS, The American Medical Association is strengthening its membership recruitment efforts; and

WHEREAS, The American Medical Association and the American Association of Medical Society Executives studied and drafted jointly, criteria for dues billing and remittance; and

WHEREAS, The Kansas Medical Society is interested in assisting the American Medical Association in its membership recruitment efforts; therefore be it

Resolved, That the Kansas Medical Society adopt the following criteria for AMA dues billing and remittance:

1. Each society electing to bill for AMA

dues should give written notice to the AMA of its intention to bill according to these established criteria. It is understood that in those societies which do not elect to accept the criteria, then AMA will bill its members directly and so advise these societies in advance.

2. Annually, each participating society should render the first billing for AMA dues by December 1.

3. The societies should include AMA dues on every regular billing of their society members and should solicit at least one more time those who have paid county and state dues but not AMA dues.

4. Billing societies should place the AMA figure in the same column on the billing form as county and state dues and the AMA dues figure should be included in any dues total on the bill.

5. Billing societies should include a message promoting federation membership in each billing and each delinquency notice. The AMA will prepare and make available such promotional messages unless the billing society chooses to prepare its own.

6. Each society receiving AMA dues should forward AMA dues and a list of the payers of the dues within 30 days of receipt of the dues. All dues collected within the last 30 days prior to the AMA delinquency date should be forwarded in time to reach the AMA prior to that delinquency date.

7. Each society billing for AMA dues should send the AMA a report of billing schedules, a sample of each billing form and a promotional message, and the number of physicians billed for AMA membership at each billing.

8. Where these criteria are met, there should be reimbursement by the AMA to state associations for equitable, shared distribution to any component societies involved in the billing process, on the following formula basis:

2.0% of dues received by the AMA no later than January 15th;

1.5% of dues received by the AMA no later than February 15th;

1.0% of dues received by the AMA no later than March 15th; and

0.5% of dues received by the AMA after March 15th.

Reimbursement by the AMA on Criterion No. 8 should be made to state associations within 30 days after receipt by the AMA of AMA dues.

RESOLUTION NO. 79-5

Medical Care Costs

WHEREAS, Increases in the cost of medical care are real and continuing, causing concern by individuals, families, business, government and physicians; and

WHEREAS, Much of the increase in cost is caused by new technology and treatment methods which result in better care, prolonged life or a better quality of life; and

WHEREAS, Other important factors causing the increases in costs are government regulations, higher labor, energy and malpractice costs and general inflation; and

WHEREAS, Tom E. Nesbitt, M.D., President of the American Medical Association, called on physicians in his inaugural address to use restraint in their fee increases; therefore be it

Resolved, That the Kansas Medical Society endorse the call by AMA President Tom E. Nesbitt, M.D., for physicians to help moderate increases in medical care costs by using appropriate restraints to keep fee increases more nearly in line with the annual increase in cost of living.

RESOLUTION NO. 79-6

Hospital Rate Review

WHEREAS, The legislature will look at prospective hospital rate and budget review during the coming legislative session; and

WHEREAS, There are a variety of different state mechanisms already in existence; some voluntary (Indiana), some legislated (Maryland, Washington State) with some questions about amounts actually saved, and some whose power is being challenged in the courts; and

WHEREAS, The voluntary effort on cost containment has shown its ability to restrain the amount of increase in health care costs and has the approval of physicians, hospitals and government; and

WHEREAS, The voluntary cost containment effort encompasses a much wider scope than the hospital rates in its combined effort; therefore be it

Resolved, That the Kansas Medical Society endorse the Kansas Hospital Prospective Rate Review Program and petition the Kansas legislature to defer action on any legislated hospital rate review program pending further information on the continuing effectiveness of the voluntary cost containment effort.

RESOLUTION NO. 79-7**KMS National Health Insurance
Policy Statement**

Not adopted.

RESOLUTION NO. 79-8**Prospective Rate and Budget Review**

Not adopted.

RESOLUTION NO. 79-9**KMS National Health Insurance
Policy Statement**

Not adopted.

RESOLUTION NO. 79-10**Chiropractic Venipuncture Privilege**

WHEREAS, The Kansas Medical Society has always held that chiropractic through its philosophy and teaching has no need to pierce the skin in diagnosis and/or treatment; and

WHEREAS, Repeated opinions by Attorneys General of the State of Kansas have held that chiropractors cannot pierce the skin; and

WHEREAS, There has been no proof to the medical scientific community that chiropractors possess the fundamental background in training to be able to utilize blood samples for effective patient care; therefore be it

Resolved, That chiropractors *not* be granted the permission to withdraw blood by venipuncture for diagnosis testing; and be it further

Resolved, That copies of this resolution be sent to all Kansas legislators.

RESOLUTION NO. 79-11**Second Opinion Surgical Programs**

WHEREAS, Second Opinion programs have been inaugurated by Prudential Insurance Company and HEW Medicare and Medicaid programs as a method to reduce medical costs and eliminate unnecessary surgery despite the fact that there is no proof that Second Opinion programs are cost effective, nor that there is massive unnecessary surgery; and

WHEREAS, Consultations have been an integral part of the practice of medicine since its inception; and

WHEREAS, Physicians are urged to seek consultation whenever it is in the best interests of good patient care; therefore be it

Resolved, That the Kansas Medical Society is in opposition to coercive Second Opinion programs that:

- a. Establish closed panels of consultants
- b. Limit choice of physician by patient or doctor
- c. Predetermine qualifications of consultants
- d. Predetermine categories of elective versus non-elective surgeries
- e. Establish reimbursement for such consultations
- f. Establish restrictions on the consultants;

and that such coercive programs are detrimental to the doctor/patient relationship.

RESOLUTION NO. 79-12**Physician Extender Supervision**

Not adopted. Referred for study.

RESOLUTION NO. 79-13**Federal Regionalism**

WHEREAS, The direct application of the principles of federal regionalism as evidenced by the bi-state Health Planning Agency (HSA-IV) is of doubtful value and is oppressive; therefore be it

Resolved, That the Kansas Medical Society support the concept of Kansas House Concurrent Resolution 5010 and ask for a Kansas legislative study of federal regionalism.

RESOLUTION NO. 79-14**Medical Scholarship Program**

Not adopted.

RESOLUTION NO. 79-15**Committee to Study CME**

WHEREAS, Medicine, a venerable profession embracing scientific principles of treatment since the age of Hippocrates, utilizes a large and unique body of continually evolving and advancing knowledge along with a set of skills and attitudes that in and of itself motivates the individual physician to voluntarily seek on a continuing basis an education that fulfills each physician's particular needs; and

WHEREAS, Organized groups within medicine — the American Medical Association, the American

Academy of Family Practice, the American College of Surgeons, the American College of Physicians, to name a few formal ones — for years now have produced successful programs of continuing education utilizing the most sophisticated, modern, and diversified systems of presentation available. In fact, the demand, attendance, and participation in these programs spoke favorably in behalf of such professional voluntarism; but

WHEREAS, Elements of our contemporary society have challenged the ability of medicine to motivate its members to pursue a voluntary course of continuing education based upon the attainment of personal satisfaction descending from a set of professional attitudes and values alone. Instead, these elements have chosen to legislate a program of compulsory education based upon the acquisition of credentialed credits; and

WHEREAS, New and innovative programs often generate unwarranted expense, create a set of reprehensible values of their own, as well as fail to attain the intended objectives as effectively as the system they were chosen to supersede; and

WHEREAS, The legislation of compulsory medical education as well as the threat thereof has been attended by the proliferation of a diverse group of programs, sometimes under uncertain sponsorship, that offer for a fee — and sometimes a sizeable one — educational credits. Furthermore, such proliferated programs now raise questions about quality, appropriateness, camouflaged secondary gains, the introduction of marketplace values into professionalism and the suppression of less formal but effective programs, therefore be it

Resolved, That the Kansas Medical Society endorse the formation of an AMA committee to study in depth continuing medical education as it presently exists, assess the impact of current trends upon intended goals and the influence contemporary legislation can be expected to exert upon voluntary professionalism, and prepare for the medical profession a comprehensive report of their study; and be it further

Resolved, That the Kansas Medical Society endorse the introduction of this resolution and such amendments that may be appended thereto at the next meeting of the AMA House of Delegates for endorsement and implementation.

RESOLUTION NO 79-16

Seek Solution to Current System of CME

WHEREAS, Our current system of continuing medical education directs its thrust at broad medical

subjects and does not fulfill the needs of some smaller components pursuing a narrow but essential avenue of educational inquiry; and the substitution of a compulsory credentialed system for a voluntary one catering to individual needs and personal satisfactions now threatens the needs, interests, and goals of such smaller components; and

WHEREAS, The American Medical Association has demonstrated previous and long-standing proficiency in continually meeting the educational needs of its members; therefore be it

Resolved, That the Kansas Medical Society ask the American Medical Association to seek and implement a solution or solutions to this problem and this need; and be it further

Resolved, That this request be placed before the AMA House of Delegates as a resolution at their next session.

RESOLUTION NO. 79-17

Breast Feeding

WHEREAS, Nutrition, including breast feeding, is a major action initiative of the American Academy of Pediatrics program entitled “Speak Up for Children!,” which is this nation’s major child health effort during the International Year of the Child, 1979; and

WHEREAS, Encouragement of breast feeding is a major nutritional initiative also of the Canadian program during the International Year of the Child, 1979; and

WHEREAS, The Committee on Nutrition of the American Academy of Pediatrics and the Nutrition Committee of the Canadian Paediatric Society recently completed an examination and evaluation of present-day information to provide up-to-date guidance for physicians in counseling mothers with regard to feeding their infants, to discuss factors related to the decline of breast feeding in the United States and Canada, and to propose ways and means to encourage breast feeding if the advantages of breast feeding prove compelling; therefore be it

Resolved, That the Kansas Medical Society endorse the summary statement resulting from a study by the Committee on Nutrition of the American Academy of Pediatrics and the Nutrition Committee of the Canadian Paediatric Society, entitled “Breast Feeding: A Commentary in Celebration of the International Year of the Child, 1979,” which was made public in October 1978, and reads as follows:

1. Full-term new-born infants should be breast fed, except if there are specific contraindications or when breast-feeding is unsuccessful.

2. Education about breast feeding should be provided in schools for all children and better education about breast feeding and infant nutrition should be provided in the curriculum of physicians and nurses. Information about breast feeding should also be presented in public communications media.

3. Prenatal instruction should also include both theoretical and practical information about breast feeding.

4. Attitudes and practices in prenatal clinics and in maternity wards should encourage a climate that favors breast feeding. The staff should include nurses and other personnel who are not only favorably disposed toward breast feeding but also knowledgeable and skilled in the art.

5. Consultation between maternity services and agencies committed to breast feeding should be strengthened.

6. Studies should be conducted on the feasibility of breast feeding infants at day nurseries adjacent to places of work subsequent to an appropriate leave of absence following the birth of an infant;

and be it further

Resolved, That the Kansas Medical Society distribute this statement to all component medical societies; and be it further

Resolved, That the Kansas Medical Society endorse the position that every woman should have the opportunity to breast feed, noting the advantages particularly to the infant.

RESOLUTION NO. 79-18

International Year of the Child — 1979

WHEREAS, As a nation, America always has prided itself on its devotion to children and always has been dedicated to the principle that the dream of a better life for succeeding generations is central to its national self-image; and

WHEREAS, Despite this devotion and dedication, the dream has not come true for many American children — from all parts of the country and all levels of society; each year, thousands of children are killed or suffer preventable injuries in accidents, far too many children still go to bed hungry or must cope with life-long problems due to improper nutrition, and millions are unprotected against communicable diseases which still can cripple and kill; and

WHEREAS, Because of neglect these problems have a high social cost in dollars, in wasted potential and in human values, America's pediatricians believe the nation must be made aware of the special needs of infants, children and adolescents, and must meet these needs in a way that maximizes each child's chances for a full and healthy life; and

WHEREAS, In initiating a major worldwide program — the International Year of the Child, 1979 (IYC) — the United Nations urged participating or-

ganizations to institute action programs aimed at the specific needs of children in the individual country; and

WHEREAS, The American Academy of Pediatrics, whose members are dedicated to the constitutional goal of "attainment by all children of the Americas of their full potential for physical, emotional and social health," has developed for this nation a major IYC child health care initiative entitled "Speak Up for Children!"; and

WHEREAS, This national program has as its goal "to cause consciousness-raising across the American community concerning the total health and welfare of all means and efforts, including through their offices, clinics and communities, and through effective child health advocacy with government and other organizations; and

WHEREAS, Although the Academy's IYC "Speak Up for Children!" program seeks to increase awareness about the full range of issues affecting child health, it focuses most directly on four subject areas:

Accident Prevention — because accidents are the greatest cause of suffering and death among American children;

Nutrition — because good nutrition starting at conception and continuing through adulthood is basic to a healthy, productive life;

Immunization — because children must be protected against supposedly "conquered" diseases still capable of producing epidemics; and

Health Education — because effective health education for children, adolescents, and their families can contribute to happier, healthier, and more productive lives; therefore be it

Resolved, That the Kansas Medical Society pledge its full support to the American Academy of Pediatrics "Speak Up for Children!" program as this nation's prime health care initiative during the International Year of the Child, 1979, and call upon all members of the medical profession and all other segments of society to assist in the attainment of this program's goals.

RESOLUTION NO. 79-19

Seat Belt Restraints for Infants and Children

WHEREAS, Accident Prevention is a major action initiative of the American Academy of Pediatrics program entitled "Speak Up for Children!" which is the nation's major child health effort during the International Year of the Child, 1979; and

WHEREAS, The National Safety Council states that each year approximately 1000 persons under five years of age are killed in the United States while

traveling in motor vehicles that crash, and current U. S. Vital Health statistics state that many thousands more are injured; and

WHEREAS, There is authoritative evidence that many of these deaths and injuries could be prevented if infants and children in crashes were restrained by seat belts, used alone or in conjunction with devices such as infant carriers or car seats that are specially designed to provide crash protection in motor vehicles; therefore be it

Resolved, That the Kansas Medical Society encourage all physicians to support educational programs relating to the use of seat belts or other motor vehicle crash protection restraints for infants and children.

RESOLUTION NO. 79-20

Probationary Members

WHEREAS, Probationary members presently receive the *Journal* and all other correspondence forwarded from the state office and are eligible to participate in group insurance programs, for which no dues are assessed; and

WHEREAS, Some probationary members remain in that status from one to two years before being voted into active status by the component society; and

WHEREAS, Costs associated with providing these services are ever increasing, therefore be it

Resolved, That the Constitution and By-Laws Committee be directed to draft appropriate changes in the By-Laws requiring that Probationary members be assessed half dues.

RESOLUTION NO. 79-21

Associate Membership Category

WHEREAS, Some physicians residing or practicing on state borders may wish to belong to the Kansas Medical Society as well as another state medical association; and

WHEREAS, The By-Laws of the Kansas Medical Society presently prohibit dual state membership; therefore be it

Resolved, That the Constitution and By-Laws Committee be directed to insert into the By-Laws language that:

1. Deletes the prohibition against dual state membership in Sections 11.7 to 11.74; and
2. Establishes an Associate Member category for active members of other state medical societies which will require payment of one-half dues and assessments but will not entitle the member to vote or hold office in this Society.

RESOLUTION NO. 79-22

Component and State Society Membership

WHEREAS, Section 11.43 of the Kansas Medical Society By-Laws state that "no physician may be an active member of a component society without becoming a member of the Kansas Medical Society"; and

WHEREAS, Some component societies are not complying with this provision of the By-Laws; therefore be it

Resolved, That the Kansas Medical Society reaffirm its support of this provision of the By-Laws; and be it further

Resolved, That all component medical societies be required to comply with the provisions of the By-Laws as required by their charter.

RESOLUTION NO. 79-23

Relations With Specialty Societies

WHEREAS, Resolution No. 72-41 invited the specialty organizations to explore ways in which their specialized interests and those of medicine as a profession could be even more closely unified, and offered Kansas Medical Society assistance in mailings, arranging meetings, and such other staff work as may reasonably be accomplished; therefore be it

Resolved, That the Kansas Medical Society reaffirm its position of enhancing relations with the specialty organizations; and be it further

Resolved, That the Council be directed to study the *Report on Relations With Specialty Societies* adopted by the AMA and American Association of Medical Society Executives; and be it further

Resolved, That the Council direct the Executive Office to implement those recommendations that it finds are appropriate and feasible.

POLICY STATEMENT ADOPTED BY AMERICAN
MEDICAL ASSOCIATION

AND

AMERICAN ASSOCIATION OF MEDICAL SOCIETY
EXECUTIVES

December 6, 1978

Report on Relations with Specialty Societies

In considering the following recommendations, one should be aware of the following premises:

- * Although the recommendations are designed for state associations, they may well be equally applicable to larger county medical societies.
- * Steps to implement the recommendations on the state level will necessarily involve close coordina-

tion with specialty societies to encourage parallel efforts toward common goals.

- * Specialty society representation in state medical association activities as outlined below is based on the premise that state medical association membership will be a prerequisite for the individuals involved.

RECOMMENDATIONS

1. State medical associations should provide a mechanism for maintaining a position of prominence for scientific and educational activities in their policy-making bodies.

2. State associations should make provisions for formal input from specialty societies as organizations trying to deal with specialty society interests and concerns through established mechanisms of the association.

3. State associations should provide for specialty society representation (in addition to an entity focusing on science and education) in state association policy-making bodies.

4. State associations should provide for formal and direct specialty society representation in the development of legislative policy.

5. State associations should assure that, in working with specialty societies in any forum (e.g., House of Delegates, Board, Committee on Legislation, etc.), the specialty society representation is formal and chosen by the specialty societies.

6. For maximum lobbying effectiveness, state associations should provide a mechanism to bring the lobbying activities and interests of the specialty societies within the state association.

7. State association staff assignments should be arranged so that special attention can be paid to legislative and other issues of particular interest to a specialty society.

8. Insofar as practical, state medical associations should provide staff support for specialty societies, house specialty society functions, and maintain formal administrative linkage.

9. State associations should provide a mechanism (such as an inter-specialty committee within the state association) whereby the special interests of individual specialty societies can be considered and differences among the societies can be resolved in the best interest of medicine as a whole.

RESOLUTION NO. 79-24*

Judicial Committee

WHEREAS, The House of Delegates directed that a new system of dispute and complaint resolution be

investigated; and

WHEREAS, After due consideration of many alternatives, the format of a Judicial Committee is proposed (See Statement of Purpose); therefore be it

Resolved, That the By-Laws be amended by:

1. Deleting Section 8.32 to Section 8.322 inclusive, and

2. Inserting the following changes and renumbering the By-Laws accordingly.

Section 9.1: There shall be a Judicial Committee consisting of seven members, representing different specialties, serving terms of three years in length with a limit of two consecutive full terms. One member of the committee shall be a physician representing the Kansas State Board of Healing Arts. The President shall appoint the committee, from names submitted by the specialty societies, and such appointments are subject to approval by the Council. The terms shall be staggered to assure continuity. The committee shall annually elect a chairman from among its members. A majority of the Judicial Committee shall constitute a quorum and the affirmative vote of a majority of those members present shall constitute the action of the Judicial Committee.

Section 9.11: The Committee shall invite as a temporary, ex-officio member the Councilor from whose district a complaint or possible cause of action shall have been submitted. In the event that the Councilor is the subject of the complaint or cause of action, the alternate Councilor shall sit in his place.

Section 9.12: In the event that any member of the Committee is the subject of the complaint or cause of action, he shall be excluded during the Committee's deliberations and action on such complaint and from Committee membership, but shall otherwise retain the same rights and privileges as any other member of this Society.

Section 9.13: The Judicial Committee is charged with the responsibility of reviewing and acting on grievances or matters of ethics involving a member of this Society. The committee will conduct such inquiries and investigations as are needed to render timely decisions on matters referred to it. Decisions of the committee may be appealed to the Council. The decision of the Council on such appeals is final and subject to no higher appeal within this Society. The committee may utilize such consultants and advisory committees as it may require.

Section 9.14: The Judicial Committee shall receive written complaints from any person, whether or not he or she is a physician, a member of this Society, a patient of a physician, or any other person, lay or professional.

Section 9.15: After investigation of, impartial

hearing of, and deliberation upon a complaint, the Judicial Committee by majority vote, may:

- A. Consider the case closed.
- B. Recommend settlement.
- C. Express its advice to a member of this Society on any matter pertaining to his or her professional conduct.
- D. Recommend to the Council of the Society:
 1. That it take action to expel, suspend or reprimand a member, and/or
 2. Submit proposed charges to an appropriate state or federal law enforcement agency, and/or
 3. Submit the case and findings to the Kansas State Board of Healing Arts.

Section 9.16: Upon reaching a decision, the Judicial Committee chairman shall transmit to the Council a written statement and explanation of the final decision as soon as possible after the committee has completed the investigation of the case and has arrived at its decision.

Section 9.17: The Judicial Committee shall keep a complete record of all complaints, answers, findings, and final disposition of its decisions and disposal of complaints, and shall prepare an annual report to the Kansas Medical Society.

Section 9.18: The Judicial Committee shall not at any time exceed or take by assumption any authority other than that granted by this Constitution and By-Laws.

JUDICIAL COMMITTEE

Statement of Purpose

The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession, and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

The above quote, taken from the Principles of Medical Ethics of the American Medical Association, serves as a constant reminder to physicians to safeguard the integrity of the profession. Ethical practice means much more than simply being diligent in one's own practice. It also means protecting patients from physicians who are deficient in moral character or professional competence. It is our obligation then, to actively work to assure that our colleague physicians are of the highest character and professional ability.

The umbrella of the state medical society gives us just such an opportunity, since the vast majority of physicians in this state share the common bond of membership, both at a local and state level, in organized medicine. Recognizing that our method of assuring quality and reviewing the ethical conduct of our colleagues has been lacking in the past, we must begin now to revitalize our efforts. Currently, the Council of the Kansas Medical Society acts as the board of censors for all disputes involving members, whether they be ethical in nature, or involve questions of physician competence. Because the Council meets only four times a year, it has been difficult to maintain a smoothly working response mechanism. Additionally, the geographic problems of requiring each Councilor to have primary investigative responsibility in his district have become sizeable. In short, this system has not worked as it should, and the profession and the public are looking to us for leadership. We propose to eliminate the old system and replace it with a new, more responsive method of dealing with the complaints and questions of ethics that come to the Kansas Medical Society office.

A multi-discipline Judicial Committee should be established, and be charged with the responsibility of receiving, reviewing and acting on complaints, questions of competence, and ethics which are brought to the Kansas Medical Society office involving a member. Additionally, we propose that the Judicial Committee be assisted by specialty advisory committees to be used as resources when questions of competence or ethics cannot be handled by the Judicial Committee acting alone. One aspect of the old system that we will retain is the involvement of county medical societies in dispute resolution. It is contemplated that every complaint or matter that comes to the attention of the Judicial Committee, first be referred to the appropriate county medical society with a request that the matter be dealt with in a reasonable period of time. We firmly believe that most disputes can be best handled at the local level if addressed quickly and in an impartial manner. To that end, we also propose that a uniform set of guidelines for complaint resolution be developed and disseminated to county medical societies for adoption into their by-laws.

The system we are proposing will guarantee physicians due process in the investigation of and resolution of complaints and disputes. We do not wish to, nor will we abridge or violate any of the rights and privileges a member physician has, but a fair and responsible mechanism must be carried out impartially to merit trust and credibility. It is contemplated that any person may initiate a complaint, and if

merited, an investigation will follow. Questions of physician competence, ethical disputes, and related matters are issues that the Judicial Committee will address. It is contemplated that decisions of the Judicial Committee may only be appealed to the KMS Council, which shall retain final authority in all such matters.

All complaints, correspondence, testimony and all written matters pertaining to the work of the Judicial Committee, including final decisions, shall be kept strictly confidential. However, when appropriate, the decision of the Judicial Committee may be referred to state or federal law enforcement agencies or the Kansas State Board of Healing Arts for further action.

In all cases, hearings, investigations, and decisions of the Judicial Committee shall be carried on in accordance with the *Principles of Medical Ethics* of the American Medical Association and the Kansas Medical Society.

RESOLUTION NO. 79-25

James E. Hill, M.D.

WHEREAS, James E. Hill, M.D., has served with distinction as a member of the Healing Arts Board for 15 years; and

WHEREAS, He was Secretary of the Board for five of those years; and

WHEREAS, His experience, dedication to the job, and understanding will be missed; therefore be it

Resolved, That this House of Delegates sincerely thanks and heartily commends James E. Hill, M.D., for his outstanding service to the people of Kansas during his tenure on the Healing Arts Board; and be it further

Resolved, That the Kansas Medical Society extend to Dr. Hill its warmest wishes for an enjoyable and productive retirement.

RESOLUTION NO. 79-26

Continuing Medical Education for Nurses

WHEREAS, Kansas state statutes require that registered nurses obtain a certain number of continuing medical education (CME) hours in each two-year period in order to be eligible for licensure; and

WHEREAS, It is understood that certain restrictions have been developed which prevent registered nurses, including nurse clinicians and nurse practitioners who are practicing in conjunction with their associated physician, from attending CME courses which are conducted for physicians on clinical matters; and

WHEREAS, There are many registered nurses, nurse clinicians, and nurse practitioners who work very closely with their associated physician or physicians, and who would in fact benefit from having continued increased exposure to many of the clinical subject matters to which physicians are exposed; therefore be it

Resolved, That the Kansas Medical Society initiate discussions with the Kansas State Nurses Association and the Kansas State Board of Nursing to attempt to clarify and to make available for CME credit to registered nurses certain CME courses essentially put on for physicians but which would also be beneficial and appropriate as medical education for nurses.

RESOLUTION NO. 79-27

Nursing Education

WHEREAS, Physicians are greatly interested and concerned with nursing education; and

WHEREAS, Physicians, more than any other group, are aware of the role of nurses in patient care; and

WHEREAS, Physicians are the individuals primarily responsible for patient care and health care delivery; and

WHEREAS, Organized nursing, the Board of Nursing, and nursing education have been making changes and suggesting changes in the nurses training field with little consideration or input from physicians; therefore be it

Resolved, That the Kansas Medical Society oppose the requirement that all nursing programs be a Bachelor's Degree program; and be it further

Resolved, That the Kansas Medical Society advocate continuation of the three-year diploma program; and be it further

Resolved, That replacement of a three-year program with the two-year program is unsatisfactory; and be it further

Resolved, That LPN programs as they are presently constituted be continued as one-year programs; and be it further

Resolved, That the Kansas Medical Society offer to consult with the Nursing Board, Nursing Association, and nurse training programs at any time on this matter; and be it further

Resolved, That a copy of this resolution be sent to the Kansas Legislature, the State Board of Nursing, the State Board of Regents, the various nursing associations, the nurse training programs, and all nurses in the state of Kansas.

RESOLUTION NO. 79-28**Public Health Services in Kansas**

Not passed. Referred for study.

RESOLUTION NO. 79-29**Kansas Medicaid Program**

WHEREAS, The Kansas Medicaid program refuses to reimburse physicians for the cost of necessary soft items such as elastic bandages, slings, and splints which are required frequently in ordinary medical practice, and insists they be secured from a separate commercial source; therefore be it

Resolved, That the Kansas Medical Society inform the Governor, Department of Social and Rehabilitation Services, and all members of the legislature that this policy only increases the cost to the state, delays treatment, and should be modified.

RESOLUTION NO. 79-30**Health Care Cost Containment**

WHEREAS, Rising health care costs are a concern to all citizens, with health care cost containment, while maintaining quality care, being the goal of all persons involved in providing medical care services; and

WHEREAS, Rising health care costs cannot be blamed on any one single entity, but are due to a multitude of factors which include consumer-patients; physicians, hospitals, auxiliary personnel and providers; insurance company-governmental third party-payers; educational institutions; unions and management; private organizations and agencies; and last but not least, government on every level; and

WHEREAS, Long term medical care cost containment, without sacrificing quality of care, can only come about by curtailing proliferation and overuse of health and medical services and by each entity involved in the health care scene playing its own individual role and by cooperating with all other agencies of the health care industry; and

WHEREAS, It is recognized that the majority of health insurance policies now in force promote over-utilization and remove incentives from all parties involved to curtail costs; and

WHEREAS, Inclusion of reasonable deductibles and co-insurance has proven to be successful utilization control mechanisms with significant financial savings; therefore be it

Resolved, That the Kansas Medical Society adopt the position of favoring enactment by the Kansas

Legislature of legislation requiring all medical insurance coverage sold in the State of Kansas to include reasonable deductible, catastrophic, and co-insurance features; and be it further

Resolved, That the Kansas Medical Society Legislative Committee begin immediately initiating the necessary action to accomplish introduction of such legislation during the 1980-81 session of the Kansas Legislature, and be it further

Resolved, That a copy of this resolution be sent to the Insurance Commissioner of the State of Kansas.

RESOLUTION NO. 79-31**Professional Liability Cases**

WHEREAS, The Kansas Medical Society is deeply concerned over the increased length of professional liability trials; and

WHEREAS, This has a devastating effect on the physician, his family, staff, patients, and his entire practice; and

WHEREAS, The Kansas Medical Society is concerned over increasing dollar amounts awarded; and

WHEREAS, The basic purpose of professional liability insurance is to compensate the injured party for actual damages sustained; and

WHEREAS, The Kansas Medical Society is concerned about the use of medical expert witnesses who travel across the country to testify for the plaintiffs; and

WHEREAS, The Kansas Medical Society believes the increasing number of cases, coupled with increased awards, has significantly added to increasing medical practice defensive medicine, which is not in the best interest of patients, and causes inflation of medical costs; therefore be it

Resolved, That the Kansas Medical Society Professional Liability Commission study recent professional liability actions and critically evaluate the merits of these cases, the verdicts, the awards, and the length of trial; and be it further

Resolved, That the report of the Professional Liability Commission be submitted to the House of Delegates for approval at its next meeting, and following approval, such report be sent to the Kansas Trial Judges Association.

RESOLUTION NO. 79-32**Reno County Medical Society and Auxiliary**

WHEREAS, The Reno County Medical Society and its Auxiliary have provided the Kansas Medical Society and its Auxiliary with excellent facilities and
(Continued on page 392)

Council Meeting

Report of Meeting Held May 6, 1979

A meeting of the Council was held on Sunday, May 6, 1979, at the Holiday Inn Holidome, Hutchinson, immediately upon the adjournment of the second session of the House of Delegates. Present were Drs. Donald D. Goering, President, Coldwater; Lewis G. Allen, Kansas City; John N. Blank, Hutchinson; Kenneth M. Boese, Manhattan; Clair C. Conard, Dodge City; Jack R. Cooper, Shawnee Mission; Louis M. Culp, Kansas City; Herbert Fransen, Newton; Philip A. Godwin, Lawrence; Herman W. Hiesterman, Quinter; Robert W. Hughes, Lawrence; Warren E. Meyer, Wichita; Herbert M. Nason, Kansas City; Lew W. Purinton, Wichita; Ivan E. Rhodes, Wichita; Alex Scott, Junction City; Floyd L. Smith, Colby; Newton C. Smith, Arkansas City; Millard C. Spencer, Topeka; Max E. Teare, Garden City; William K. Walker, Sedan; Roger D. Warren, Hanover; Wallace N. Weber, Hays; Kermit G. Wedel, Minneapolis; Emerson D. Yoder, Denton; and John O. Yulich, Kansas City.

Also present was Mrs. Jack R. Cooper.

Also present were Jerry Slaughter, Gary Caruthers, and Val Braun.

Richard Greer, M.D., Topeka, was reappointed to serve another three-year term on the Editorial Board. Unanimously and enthusiastically, David E. Gray, M.D., Topeka, was reappointed editor.

The Council was reminded that the Executive Office is discontinuing on a trial basis the in-house addressograph services in favor of using computer generated mailing labels and a mailing house. The costs of the mailing firm are comparable to the in-house costs.

In the absence of an invitation to host the 1980 Annual Session, the Councilors from Wyandotte and Johnson counties were asked to discuss with their respective medical societies the possibility of hosting that meeting and to report their decision to the Kansas Medical Society. Tentative arrangements have been made with Glenwood Manor. There is a possibility of combining the KMS meeting with that of the KU Infectious Disease Seminar and the American Academy of Family Physicians State Officers conference.

Mrs. Cooper reported that the KMS Auxiliary was invited to Overland Park for the 1980 meeting, and that both the Auxiliary of the Johnson and Wyandotte counties would host that meeting.

The Council approved discontinuance of com-

mercial exhibits for future annual meetings. It was suggested that with this change, because less extensive meeting facilities will be required, other cities be considered for possible meeting sites.

Dr. Meyer was requested to continue exploring proposals regarding in-house minicomputer system for the Executive Office.

Dr. Meyer gave a preliminary report concerning the creation of a position of Public Affairs Director, an administrative assistant in charge of legislation. He estimated that a total additional budget of \$30,000 (including an additional secretary) would be generated by this position, but that the funds would be available in view of the recent dues increase. Other considerations such as added space, need to be clarified. A more detailed report regarding this topic will be given at the September Council meeting.

Mr. Slaughter reported that currently more than 90 per cent of income received by the Kansas Medical society comes from membership dues. Because of inflation, there is the increasing pressure to raise the dues, but there is also a limit to what is reasonable and will be accepted by members. Mr. Slaughter stated that other medical associations are presently looking at non-dues related income to supplement their budget, and that he has initiated a study into some such possibilities for Kansas.

The Council authorized the Executive Office to contact the specialty societies in Kansas, advising them of possible services that could be offered to them if requested. The results of this study will be reported to the Council in September.

Dr. Goering introduced the following newly elected Councilors: Louis M. Culp, M.D., Kansas City; Ivan E. Rhodes, M.D., Wichita; and Wallace N. Weber, M.D., Hays.

Dr. Scott suggested that the President, on his visits to the Council districts during the coming year, also speak to various community groups, news media, and others as can be arranged by the local component society. This was referred to the PR Committee for study.

The following suggestions were made for the Nominating Committee 1980: Warren E. Meyer, M.D., Chairman; Drs. F. Calvin Bigler, G. Rex Stone, and Emerson D. Yoder. Suggested as alternates were: Drs. Ernie J. Chaney, Wendale E. McAllaster, and Marvin D. Snowbarger.

The meeting adjourned at 1:15 PM.

DO YOU REMEMBER THESE TWO GREATS?



THIS PAIR OF BRONZE MEDALLIONS WITH RAISED FIGURES OF BOBBY JONES AND BABE RUTH CAN BE YOURS IN EXCHANGE FOR FIVE MINUTES.

SEND A LIST OF YOUR ANTICIPATED MEDICAL EQUIPMENT NEEDS FOR YOUR OFFICE FOR 1979 TO JOE SHERMAN AT 101 GAGE BLVD. TOPEKA, KANSAS, 66601.

YOUR MUNNS REPRESENTATIVE WILL DELIVER TO YOU YOUR SET OF MEDALLIONS....IT'S THAT EASY.

THIS OFFER EXPIRES JUNE 30, 1979, AND QUANTITIES ARE LIMITED SO DON'T DELAY!





AUTOBIOGRAPHY OF DYING, by Archie Hanlon, edited by Muriel F. Nelson. Doubleday and Company, Inc., New York, 1978. 193 pages. \$8.95.

Death — this is a subject currently covered in the literature from many aspects and much in conversation. Various authors suggest there is face to be saved, the humiliation of torture to be avoided, and the noblest of noble ways to die. More recently Dr. Kubler-Ross has added psychological dimensions that recognize denial of the clinical verdict and postponement of early treatment. Others talk of personal choices — rights, if you please — that call for clinical intercessions in behalf of an easier death or the preservation of dignity. Herein resides controversy and the basis for conversation regarding death.

Almost everyone today knows that baseball idol Lou Gehrig died of amyotrophic lateral sclerosis. His biography records the natural course of this incurable problem. In modern medicine, the natural course of a disease has become an essential aspect of comparative medical measurement: to the patient it proclaims the presence of a serious liability; to the socially involved it may present an impending opportunity. Dr. Archie Hanlon, Professor of Sociology, found himself in a comparable plight when he developed amyotrophic lateral sclerosis, discovered the diagnosis, and recorded his ever-declining existence in a diary that became the source of his book.

Unlike more common diseases that often dull the senses somewhat in proportion to the impairment of ability, this disease more often leaves the intellect sharp and intact until the very last. The voluntary system of skeletal muscles suffers progressive impairment. When the disease reaches the intercostal muscles and diaphragm, suffocation may begin. This is at least one mechanism by which death may agonize the victim at the end.

Hanlon's *Autobiography of Dying* fails to accurately portray his final hours. Since he approached

his doctors about their attitudes on euthanasia, to some this omission may appear to be serious; to others, this may represent an extension of his psychological denial, his humanness. The book also lacks an index, if this can be a fault.

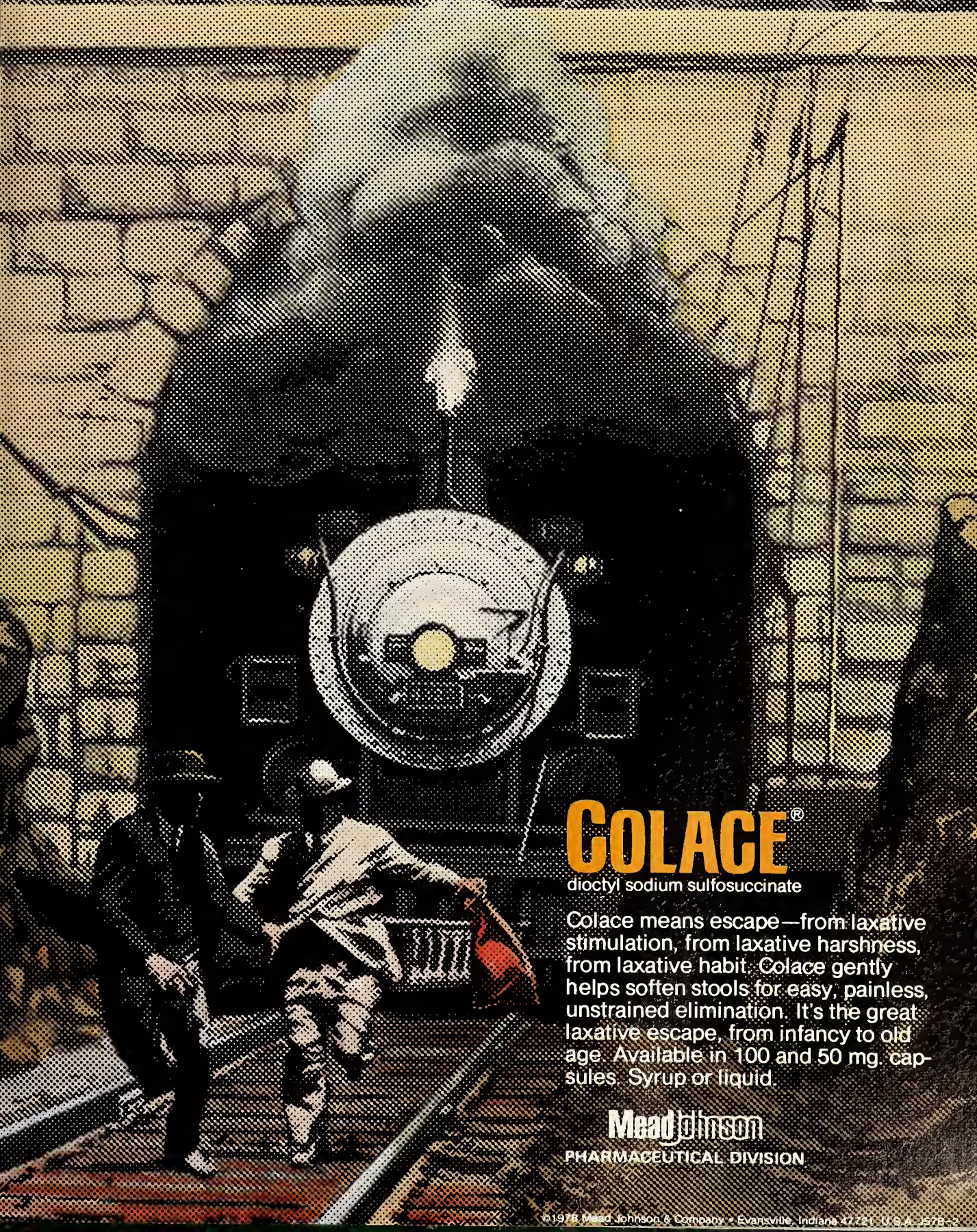
For those interested in dimensions of disease that transcend anatomy, physiology and pathology, the reader will find recorded here an interesting and readable case report. — J.R.C.

CHANGE OF ADDRESS

Please notify the
Kansas Medical Society
of any changes in address

*Help keep the mailing list
up to date*

The Great Laxative Escape



COLACE[®]

dioctyl sodium sulfosuccinate

Colace means escape—from laxative stimulation, from laxative harshness, from laxative habit. Colace gently helps soften stools for easy, painless, unstrained elimination. It's the great laxative escape, from infancy to old age. Available in 100 and 50 mg. capsules. Syrup or liquid.

MeadJohnson

PHARMACEUTICAL DIVISION

COMPATIBILITY



Eastern Tiger Swallowtail Butterfly
(*Papilio glaucus*)

Does it influence your choice of a peripheral/cerebral vasodilator*?

Vasodilan—compatible with coexisting diseases (e.g., glaucoma, diabetes)

Vasodilan has not been reported to affect the course of coexisting disease; it has not been reported to affect blood sugar levels or to raise intraocular pressure.

Vasodilan—compatible with concomitant therapy

Vasodilan has not been reported to affect the treatment of coexisting disease; it is compatible with such drugs as hypoglycemics and miotics.

Vasodilan—compatible with your total regimen for vascular insufficiency

Vasodilan can be a valuable adjunct in planning a total therapeutic program for vascular insufficiency.

***Indications:** Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, the FDA has classified the indications as follows:

Possibly Effective:

1. For the relief of symptoms associated with cerebral vascular insufficiency.
2. In peripheral vascular disease of arteriosclerosis obliterans, thromboangiitis obliterans (Buerger's Disease) and Raynaud's disease.

Final classification of the less-than-effective indications requires further investigation.

Composition: Vasodilan tablets, isoxsuprine HCl, 10 mg. and 20 mg. Vasodilan injection, isoxsuprine HCl, 5 mg., per ml.

Dosage and Administration: Oral: 10 to 20 mg., three or four times daily. Intramuscular: 5 to 10 mg. (1 or 2 ml.) two or three times daily. Intramuscular administration may be used initially in severe or acute conditions.

Contraindications and Cautions: There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding.

Parenteral administration is not recommended in the presence of hypotension or tachycardia.

Intravenous administration should not be given because of increased likelihood of side effects.

Adverse Reactions: On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.

Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.

Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.

Supplied: Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose; Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose; Injection, 10 mg. per 2 ml. ampul, box of six 2 ml. ampuls.

U.S. Pat. No. 3,056,836



VASODILAN[®] 20-mg tablets

(ISOXSUPRINE HCl)

20 mg q.i.d. recommended dosage

Mead Johnson
PHARMACEUTICAL DIVISION

© 1978 MEAD JOHNSON & COMPANY • EVANSVILLE INDIANA 47721 U.S.A. MJL 7-4237R



This asthmatic isn't worried about his next breath...

**he's active
he's effectively
maintained on**

QUIBRON[®]

Each capsule or tablespoonful (15 ml) liquid contains theophylline (anhydrous) 150 mg and glyceryl guaiacolate (guaifenesin) 90 mg

- theophylline for effective around-the-clock bronchodilator therapy
- 100% free theophylline

Indications: For the symptomatic relief of bronchospastic conditions such as bronchial asthma, chronic bronchitis, and pulmonary emphysema.

Warnings: Do not administer more frequently than every 6 hours, or within 12 hours after rectal dose of any preparation containing theophylline or aminophylline. Do not give other compounds containing xanthine derivatives concurrently.

Precautions: Use with caution in patients with cardiac disease, hepatic or renal impairment. Concurrent administration with certain antibiotics (i.e., clindamycin, erythromycin, tetracycline, and ampicillin) may result in higher serum levels of theophylline. Plasma prothrombin and factor V may increase, but any clinical effect is likely to be small. Metabolites of guaifenesin may contribute to increased urinary 5-hydroxyindoleacetic acid readings, when determined with nitrosonaphthal reagent. Safe use in pregnancy has not been established. Use in case of pregnancy only when clearly needed.

Adverse Reactions: Theophylline may exert some stimulating effect on the central nervous system. Its administration may cause local irritation of the gastric mucosa, with possible gastric discomfort, nausea, and vomiting. The frequency of adverse reactions is related to the serum theophylline level and is not usually a problem at serum theophylline levels below 20 mcg/ml.

How Supplied: Capsules in bottles of 100 and 1000 and unit-dose packs of 100. Liquid in bottles of 1 pint and 1 gallon.

See package insert for complete prescribing information.

Mead Johnson PHARMACEUTICAL DIVISION

© 1979 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. MJL 8-4294R2



Personalities —IN KANSAS MEDICINE

Robert P. Hudson, Kansas City, spoke on "Death, Dying and the Zealous Phase" at a recent cancer seminar in Topeka. He also discussed "Legionnaire's Disease" at Ottawa University.

George A. Vraney, Halstead, participated in a recent Hertzler Medical Symposium on "Occupational Lung Disease in the Midwest."

Robert Brown spoke on "Diabetic Neuropathy" to a recent meeting of the Salina Chapter of the American Diabetes Association.

Paul Fransen and **Owen Carper** participated in a recent one-day seminar in Newton on infant care. **Robert N. Enberg**, Hays, was instructor.

L. D. Montgomery and **N. E. Roach** were members of a neuro-psychiatric team that presented an educational program at Halstead Hospital for relicensure of registered nurses and licensed practical nurses.

R. Cullen Thomas and **F. P. Wolff** spoke at a conference on integrating medicine and religion. The Pratt Regional Medical Center presented the conference for clergy, physicians, and health care personnel.

M. Amare, Kansas City, was lecturer at a recent program in Harper on evaluation of anemia.

A. Karim Tayiem was featured speaker at commencement exercises for recent graduates of the Practical Nursing Educational Department, NEKA Vo-Tech.

Dan Montgomery, Halstead, recently returned from Chicago where he attended a two-day seminar on clinical psycho-pharmacology.

Francis W. Huston, Winchester, was recently awarded an Honorary Doctor of Humane Letters degree from Tarkio College, Tarkio, Missouri.

Rex R. Fischer, Manhattan, is the newly-elected Chairman of the Board of Directors of Blue Shield of Kansas. Other officers elected were **W. E. McAlaster**, Great Bend, First Vice-Chairman; **Herbert Fransen**, Newton, Second Vice-Chairman; and **George J. Mastio**, Wichita, Secretary.

Re-elected to the Board were: **A. O. Tetzlaff**, Shawnee Mission; **Carlyle M. Dunshee**, Fort Scott; **James N. Glenn**, Emporia; **J. G. Kendrick**, Wichita; and **M. D. Christensen**, Kiowa. New Board members include **John D. Huff**, Kansas City; **F. Calvin Bigler**, Dodge City; and **Charles A. Isaac**, Newton.

Rodney S. Dill, Atwood, participated in a recent program on health and smoking.

W. D. Hoofer and **A. J. Aillon**, Halstead, recently completed a course on postoperative management in cardiac surgery.

G. E. Kassebaum, El Dorado, was selected 1979 Boss of the Year by the Bluestem Charter chapter of American Business Women's Association.

Willard E. Kaufman, Moundridge, was recognized with the Distinguished Alumni Award by Bethel College, Newton.

William C. Swisher, Wichita, has been elected secretary of the Kansas Board of Healing Arts succeeding **James E. Hill**, Arkansas City, who resigned. **Herman H. Jones**, Kansas City, was elected vice president.

John Cody, Hays, spoke on "An Historic Overview of the Mental Health Movement" at an open meeting sponsored by Norton County Mental Health Association in observance of Mental Health Month.

S. C. McCrae, Salina, and **G. B. Joyce**, Topeka, examined children during a recent free orthopedic screening clinic in Belleville. The Clinic was sponsored by various children's health groups.

Carlos Salgado, Wichita, discussed "Prolapse of

the Mitral Valve" during a recent meeting of the Butler-Greenwood County Medical Society.

Neil Roach, Halstead, recently attended a symposium in Chicago on affective disorders.

Sigurd Daehnke, Winfield, was featured speaker at a recent meeting of the Cowley County Division of the Kansas Chapter, Arthritis Foundation.

Wendell Nickell, Salina, discussed mastectomies at a recent meeting of "Reach to Recovery." The program, sponsored by the American Cancer Society, included women from across Kansas.

The North Central Kansas Unit of the American Diabetes Association sponsored two recent meetings. **R. A. Dobratz**, Beloit, spoke on "Skin Care and the Diabetic" at a meeting in Cawker City; and **Joseph Hume**, Wichita, spoke at a meeting in Concordia on "Diabetes and Accepting the Disease."

Educational Grants

The Kansas Medical Society is grateful for the convention program grants received from:

Abbott Laboratories
Chicago, Illinois

Blue Cross-Blue Shield
Topeka, Kansas

Bristol Laboratories
Syracuse, New York

Cooper Laboratories
Parsippany, New Jersey

Eli Lilly and Company
Indianapolis, Indiana

Group Plans Agency, Inc.
Kansas City, Missouri

Duffens Optical
Topeka, Kansas

Mead Johnson and Company
Evansville, Indiana

The Medical Protective Company
Fort Wayne, Indiana

Merck Sharp & Dohme
Shawnee Mission, Kansas

Munns Medical Supply
Topeka, Kansas

Norwich-Eaton Pharmaceuticals
Norwich, New York

A. H. Robins Company
Richmond, Virginia

William H. Rorer, Inc.
Fort Washington, Pennsylvania

Smith Kline & French Laboratories
Philadelphia, Pennsylvania

Wyeth Laboratories
Shawnee Mission, Kansas

When the indications surface...

Net wt 1 oz

Net wt 1/2 oz

Net wt 1/32 oz
(approx)



NEOSPORIN® Ointment

(Polymyxin B-Bacitracin-Neomycin)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: *Therapeutically*, (as an adjunct to systemic therapy when indicated), for topical infections, primary or secondary, due to susceptible organisms, as in: infected burns, skin grafts, surgical incisions, otitis externa; primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia); secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis); traumatic lesions, inflamed or suppurating as a result of bacterial infection. *Prophylactically*, the

ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components. Do not use in the eyes or in the external ear canal if the eardrum is perforated.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control

secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



Main Bank/3433 E. Central • Wichita, Kansas 67208
Central Two/First and Hillside • Central Northwest/21st and Amidon
All Locations (316) 686-7111
MEMBER FDIC

Specialized Service
★
IN
PROFESSIONAL LIABILITY INSURANCE
is a high mark of distinction

Since 1899

THE
MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

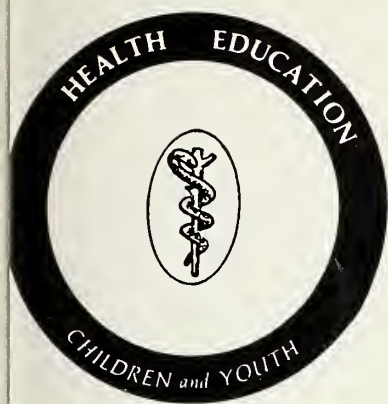
KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222



Auxiliary News

It is indeed an honor to have been entrusted with the presidency of the Kansas Medical Society Auxiliary. I shall endeavor to achieve the goals set forth by past leaders and hopefully make progress into new frontiers constantly opening before us.

As Jean Crouch, our immediate past president, has reiterated, we are pursuing ongoing programming in the area of health education for our children and youth. What better year for accomplishing this than the proclaimed "International Year of the Child"! Mrs. Robert Parman, our Learning Center Coordinator from Topeka, reported at the state meeting that her committee is in the process of building two more learning centers on body pollution, one to be placed permanently in the Topeka schools, and the second to be activated along with the first in the schools throughout the state. Our SCORE program (Student Council Offers Responsible Education) is designed by the National March of Dimes to educate teenagers on the causes and effects of birth defects and how today's lifestyles can prevent them. This program is chaired by Mrs. Royal Barker, Council Grove, and co-chaired by Mrs. Fred Elledge, Great Bend.

Of prime importance to our organization is membership, as no goals are attainable without interested members. Our membership chairman, Mrs. Bill

Lentz of Topeka, will continue to promote membership on the county and state level. Mrs. Kent Kavel, also of Topeka, will aid her in reaching the members-at-large in areas where there are no organized Auxiliary chapters. We hope to be able to communicate with and aid the resident spouse and those leaving their residencies to go into private practice. These members are the future of the Auxiliary and their input is greatly needed.

We are also fully aware of the need for involvement in the area of legislation. Mrs. S. F. Richardson, of Wichita, is our legislation chairman and she will be assisted by Mrs. Lucien Pyle, of Topeka. This very capable, dedicated team will be keeping in touch with any and all legislation affecting medicine. As the society's Auxiliary, we feel this is our Number One priority.

The Auxiliary's goals are those of organized medicine. We constantly strive to be an asset to our Medical Society and to be a direct aid in promoting better health care for the citizens of the communities in which we serve.

Sincerely,
Kathy Wedel
President
Kansas Medical Society Auxiliary

The Kansas Medical Society — 1979-1980

OFFICERS

President	Donald D. Goering, Coldwater
Immediate Past President	Warren E. Meyer, Wichita
President-Elect	Phillip A. Godwin, Lawrence
First Vice President	Herman W. Hiesterman, Quinter
Second Vice President	Kermit G. Wedel, Minneapolis
Secretary	Jack R. Cooper, Shawnee Mission
Treasurer	William K. Walker, Sedan
A.M.A. Delegate	Clair C. Conard, Dodge City
A.M.A. Delegate	Alex Scott, Junction City
A.M.A. Alternate	Lew W. Purinton, Wichita
A.M.A. Alternate	Kermit G. Wedel, Minneapolis
Chairman of Editorial Board	David E. Gray, Topeka

COUNCILORS

District 1	Roger D. Warren, Hanover
District 2	Lewis M. Culp, Kansas City
District 3	Lewis G. Allen, Jr., Shawnee Mission
District 4	Kent J. Cooper, Pittsburg
District 5	Kenneth M. Boese, Manhattan
District 6	Millard C. Spencer, Topeka
District 7	Marvin Snowbarger, Emporia
District 8	Steven J. Smith, Arkansas City
District 9	Herbert D. Doubck, Belleville
District 10	Herbert Fransen, Newton
District 11	Ivan E. Rhodes, Wichita
District 12	Philip J. Antrim, Anthony
District 13	Wallace N. Weber, Hays
District 14	Donald E. Beahm, Great Bend
District 15	Richard L. Brownrigg, Dodge City
District 16	Floyd L. Smith, Jr., Colby
District 17	Max E. Teare, Garden City
District 18	Robert W. Hughes, Lawrence
District 19	Robert F. Moore, Caney

OFFICERS OF COMPONENT SOCIETIES — 1980

<i>Society</i>	<i>President</i>	<i>Secretary</i>
Allen	George F. DeTar, Iola	Eugene Myers, Iola
Anderson	Thomas M. Dougherty, Garnett	C. B. Harris, Garnett
Atchison	A. K. Tayiem, Atchison	Robert E. Fast, Atchison
Barton	Robert Polson, Great Bend	Perry Schuetz, Great Bend
Bourbon	James J. Burke, Fort Scott	Douglas P. Weddle, Fort Scott
Butler-Greenwood	Louis S. Morgan, Wichita	N. H. Overholser, El Dorado
Central Kansas	Robert Cox, Hays	John F. Richards, Phillipsburg
Cherokee	R. M. Chubb, Baxter Springs	Orville A. Mehaffy, Baxter Springs
Clay	Richard H. O'Donnell, Clay Center	Dennis Richards, Clay Center
Cloud	Paul Nelson, Concordia	James Moore, Concordia
Cowley	Wm. H. Farrar, Arkansas City	Jerry Old, Arkansas City
Crawford	Harold James Armstrong, Pittsburg	F. A. Tweet, Pittsburg
Dickinson	Don H. Berkley, Abilene	C. R. Svoboda, Chapman
Douglas	Donald W. Hatton, Lawrence	Michael A. Well, Lawrence
Edwards	W. L. McKim, Kinsley	M. D. Atwood, Kinsley
Flint Hills	James N. Glenn, Emporia	W. Scott Ryan, Emporia
Ford	Howell D. Johnson, Dodge City	M. Amawi, Dodge City
Franklin	R. E. Sutton, Ottawa	Stephen Saylor, Ottawa
Geary	Gary Copeland, Junction City	Charles S. Bollman, Junction City
Harvey	Milton A. Claasen, Newton	A. J. Aillon, Halstead
Iroquois	J. R. Bradley, Greensburg	D. H. Donahoe, Meade
Jackson	J. C. Seeley, Holton	M. R. Moser, Holton
Jefferson	R. R. Snook, McLouth	R. C. Keys, Sr., Winchester
Johnson	William R. Brown, Shawnee Mission	James M. Muehlberger, Shawnee Mission
Labette	M. K. Borklund, Parsons	Daniel Pauls, Parsons
Leavenworth	Carroll D. Voorhees, Leavenworth	M. Zia Anwar, Leavenworth
McPherson	V. C. Price, McPherson	Weir Pierson, McPherson
Marion	James Canellos, Goessel	R. G. Franz, Hillsboro
Miami	R. E. Banks, Paola	J. G. Rowlett, Paola
Mitchell	Martin B. Klenda, Beloit	Carl W. Plowman, Jewell
Northeast	Gary Sinning, Hiawatha	Tom A. Montgomery, Sabetha
Northwest	John R. Neuschwander, Hoxie	George D. Marshall, Colby
Pawnee	Ole R. Cram, Larned	Thomas D. Ewing, Larned
Pottawatomie	Tom Dechair, Westmoreland	Tom Walsh, Onaga
Pratt-Kingman	T. L. Waylan, Nashville	Cyril V. Black, Pratt
Reno	James W. Shaw, Jr., Hutchinson	F. L. Depenbusch, Hutchinson
Republic	Duane L. Scott, Belleville	James A. Ward, Belleville
Rice	Curtis V. Wolf, Lyons	Richard A. Siemens, Lyons
Riley	William H. Tiemann, Manhattan	Frank C. Lyons, Manhattan
Saline	David A. Lasley, Salina	C. N. Waters, Salina
Sedgwick	R. L. Cummings, Wichita	Jack Moseley, Wichita
Seward	Jess W. Koons, Liberal	Jack D. Reese, Liberal
Shawnee	Dan Kelly, Topeka	Stuart C. Averill, Topeka
South Central Tri-County	Walter Forred, Harper	Jerry Hall, Anthony
Southeast Kansas	Don White, Coffeyville	Bob Haskins, Chanute
Southwest Kansas	Myron J. Zeller, Garden City	John Gilbert, Garden City
Stafford	R. P. Quackenbush, St. John	C. Everett Brown, Stafford
Wyandotte	Barbara P. Lukert, Kansas City	Michael D. Boggan, Kansas City

V-Cillin K[®]

penicillin V potassium

is the most
widely prescribed
brand of oral penicillin



Tablets

125, 250, and 500 mg*

Oral Solution

125 and 250 mg*/5 ml

V-Cillin K[®] penicillin V potassium

Description: V-Cillin K is the potassium salt of penicillin V. This chemically improved form combines acid stability with immediate solubility and rapid absorption.

Indications: For the treatment of mild to moderately severe pneumococcal respiratory tract infections and mild staphylococcal skin and soft-tissue infections that are sensitive to penicillin G. See the package literature for other indications.

Contraindication: Previous hypersensitivity to penicillin.

Warnings: Serious, occasionally fatal, anaphylactoid reactions have been reported. Some patients with penicillin hypersensitivity have had severe reactions to a cephalosporin; inquire about penicillin, cephalosporin, or other allergies

before treatment. If an allergic reaction occurs, discontinue the drug and treat with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin.

(102175)

***Equivalent to penicillin V.**

Additional information available to the profession on request.



900416

Eli Lilly and Company
Indianapolis, Indiana 46206

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.

1009 McGee St.

VI 2-4750

KANSAS CITY, MO.

Paget's Disease of Bone

(Continued from page 348)

Answers

1. False
2. True
3. False
4. False
5. False

References

1. Paget, J.: On a form of chronic inflammation of bones (osteitis deformans). *Medicochirurgical Transactions* 60:37, 1877.

Suggested Reading

1. Woodhouse, N. J. Y.: Paget's Disease of bone clinics. *Endocrinol. Metab.* 1:125, 1972.
2. DeRose, Joseph *et al.*: Response of Paget's Disease to porcine and salmon calcitonin. *Am. J. Med.* 56:858, 1974.
3. Khairi, M. R. A. and Johnston, C. C.: Treatment of Paget's Disease of bone (osteitis deformans) with sodium etidronate (EHDP). *Clin. Orthop.* 127:94, 1977.

Tenuate®

(diethylpropion hydrochloride NF)

Tenuate Dospan®

(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride) One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release. One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.

Cayey, Puerto Rico 00633

Direct Medical Inquiries to

MERRELL-NATIONAL LABORATORIES

Division of Richardson-Merrell Inc.

Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell®

References: 1. Citations available on request—Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

8-3921 (Y587A)

**Whether overweight is a
complicating factor...
or just uncomplicated overweight.**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

Merrell



For prescribing information see opposite page.

new
600 mg tablets
Motrin[®]
ibuprofen, Upjohn

More convenient for
some of your patients.

Now there are three
Motrin tablet strengths
to choose from—

600 mg, 400 mg, and 300 mg



Upjohn

The Upjohn Company
Kalamazoo, Michigan 49001, U.S.A.

© 1979 The Upjohn Company

J-6999-4

April 1979

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

IN KANSAS

YOUR INDEPENDENT AUTHORIZED DEALERS ARE:

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Emporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street • Chicago, Illinois 60646

An American Company

Generics save money. Big money!

The FTC estimates that \$400 million could be saved annually on the nation's Rx bill if physicians prescribed generics. Are you saving *your* patients extra dollars?

Purepac, America's leading manufacturer of a national brand of generics, would like to show you the tremendous savings possible with just three of our 700 generic products:

DRUG		AVERAGE RX PRICE (100's)	\$ SAVINGS WITH PUREPAC	% SAVINGS WITH PUREPAC
avabid Capsules*	150 mg.	\$10.32		
purepac Papaverine	150 mg.	3.95	\$6.37	61.7%
quanil Tablets*	400 mg.	8.15		
purepac Meprobamate	400 mg.	1.85	6.30	77.3%
ibrium Capsules*	10 mg.	8.76		
purepac Chlordiazepoxide HCl.	10 mg.	3.90	4.86	55.4%

*Registered trademarks of Marion Labs., Wyeth Labs., Roche Labs., respectively.

Purepac generics save money. Big money. Purepac is dedicated to providing our patients with quality products that are equivalent to their brand name counterparts at significant savings.

But we can't do it alone. We need your cooperation.

Send for Purepac's *free* Brand Name/Generic Name Reference Chart today. You'll receive an alphabetical listing of brand name drugs with their generic counterparts.

And next time you write a prescription, write for Purepac brand generics. Your patients will know you care.

PUREPAC. Competitive prices and peace of mind.

FREE!

Please send me my FREE copy of Purepac's Brand Name/Generic Name Chart.

Name _____

Address _____

City _____ State _____ Zip _____

Mail to Purepac Pharmaceutical Co.,
200 Elmora Avenue, Elizabeth, N.J. 07207

KM679



PUREPAC

Elizabeth, NJ 07207

THE LEADING NATIONAL BRAND OF GENERICS

INDEX TO ADVERTISERS

Beltone Electronic Corporation	390
Burroughs Wellcome Company	383
Capitol Federal Savings & Loan Ass'n	389
Central Bank & Trust	384
Geotze-Niemer Company	319
P. W. Hanicke Manufacturing Company	388
Huaman Pathology Laboratory	319
Humana Inc.	315
Lattimore-Fink Laboratories	389
Eli Lilly Company	387
Loma Linda Foods	316
Mead Johnson Pharmaceutical Division	380a, 380b, 380c, 380d
Medical Protective Company	384
Merck Sharp & Dohme	318
Merrell-National Laboratories ..	316b, 317, 318, 388, 388a
Mid-America Computing, Inc.	315
Midwest Pension Planners	313
Munns Medical Supply	379
Pharmaceutical Manufacturers Ass'n	320, 321
Purepac Pharmaceutical Co.	391
Roche Laboratories	314, C3, C4
Smith Kline & French	316a
United States Air Force	315
The Upjohn Company	388b
Warner/Chilcott Laboratories	322

Resolutions

(Continued from page 377)

arrangements for its business and scientific session; and

WHEREAS, They have acted as the perfect host in seeing to the needs and comfort of the members and their spouses during the 120th Annual Session of the House of Delegates; therefore be it

Resolved, That the Kansas Medical Society here assembled express its thanks to the Reno County Medical Society and the Reno County Medical Society Auxiliary for their dedication and hard work in fulfilling their goal and; be it further

Resolved, That copies of this resolution be forwarded to the Reno County Medical Society and the Reno County Medical Society Auxiliary.

CLASSIFIED ADVERTISEMENTS

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the *Journal*.

FOR SALE: Soundscribe equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

GREAT BEND — EMERGENCY MEDICINE PRACTICE available July 1, Mon-Thurs evenings, 5 PM-5 AM. Paid professional liability insurance, excellent specialty back-up, modern hospital, guaranteed annual income, \$50,000. Contact Tom Cooper, M.D., 1-800-325-3982.

ASPEN MUSHROOM CONFERENCE. Identification of edible, poisonous and hallucinogenic mushrooms. Treatment of mushroom poisoning. Microscopy. Novice & advanced courses. AMA Category 1. July 29-August 3, 1979. Wildwood Inn, Snowmass-At-Aspen, Colorado. Contact Beth Israel Hospital, 1601 Lowell Blvd., Denver, CO 80204. 303-825-2190, ext. 550.

What Price Melancholy?

(Continued from page 353)

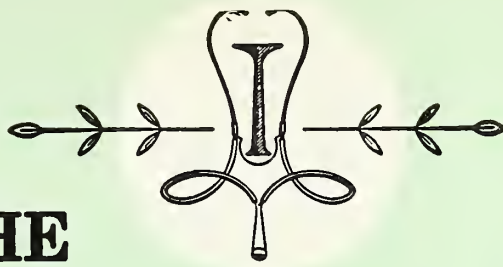
opening of a great continent with seemingly unlimited resources inviting unrestrained usage — until the day when the finite limits of those resources demand a more realistic approach?) And it can be pointed out that medicine's failure to meet the problem of hypochondriasis has been a prime factor in the development and extension to numerous cults with obvious impact on both the economy and the health of the country.

So we commend to the profession its oldest friend, the hypochondriac, and urge a rededication to the so-far unsuccessful task of eliminating him by curing him. The new physician in town may find it a little slower going at first without this well-trained cadre of patients to help him get started, but he'll be saved a lot of time and energy later. The profession has achieved more difficult victories, and beside the professional gratification that would come from the accomplishment, there is the prospect of reducing those astronomical sums by a few percentage points. — D.E.G.

USE YOUR MEDICAL
LIBRARIES

YOUR LIBRARIAN WILL BE

HAPPY TO ASSIST YOU

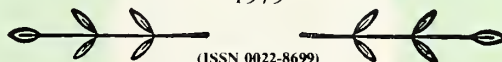


THE
Journal
Kansas
Medical
Society

LIBRARY
U.C. SAN FRANCISCO

JUL 31 1979

JULY
1979



(ISSN 0022-8699)
VOL. LXXX
NO. VII

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for July

Scientific Articles

- The Myelomeningocele Patient: A Multidisciplinary Approach to Care — Marc Asher, M.D.; Joyce Olson, R.N., M.S.; John Weigel, M.D.; Robert Morantz, M.D.; James Harris, D.O.; Bruce Leiberman, M.D.; and Wallace Whitney, C.O., Kansas City, Kansas 403
- Basic Clerkship: Students in Internal Medicine on a Community Clinical Campus — Nancy S. Nowlin, M.D., and Douglas W. Voth, M.D., Wichita 409
- Rebound Nystagmus: An Adult with Dandy-Walker Syndrome — Terry A. Cox, M.D., Kansas City, Kansas 414
- RNA Tumor Viruses: A Key to Cancerous Conversion — Henry Stone, Ph.D., University of Kansas 417

Case Reports

- Possible Mild Reaction to Erythromycin Ethyl Succinate, With Challenge — James H. Bena, M.D., Pittsburg 418
- Hypophosphatemia Associated Coma Following Treatment of Diabetic Coma — Nirandon Wongsurawat, M.D., and Vanee Wongsurawat, M.D., Topeka 419
- Malignant Teratoma in Undescended Testicle — P. J. Reddy, M.D., Hill City 419
- Vitamin D Deficiency Rickets — Steven W. Crouch, M.D., and Wayne Moore, M.D., Ph.D., Kansas City, Kansas 420
- Bronchogenic Carcinoma with Cardiac Metastasis — K. G. Nagesh, M.D.; K. P. Poulse, M.D.; G. Bhaskar, M.D.; Orlando Ventura, M.D.; and G. M. Rau, M.D., Leavenworth 422
- Persistent Severe Eosinophilia — B. Viswanathan, M.D., Topeka 423

Current Comment

- Diagnosis and Management of Acute Urethritis — Guillermo Couchonnal, M.D., and Chien Liu, M.D., Kansas City 425

Socio-Economics

- Medical Collections 429

Miscellaneous

- Advertisers 456
- Auxiliary News 452
- Classified Advertisements 456
- EDS Federal 445
- Editorial Comment: *The Stuff of Politics* 432
- Impaired Physician Program Resource List 434
- Information for Authors 455
- Officers-Councilors 453
- President's Message 431
- Professional Medical Advertising: An Overview — Howard N. Ward, M.D., J.D., Topeka 436
- Workmen's Compensation Payroll Audits 430

Address all correspondence to the JOURNAL of the KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; Editorial Assistant: Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

We can help you answer these Questions . . .

- Q** *Would Incorporating your practice save you tax dollars?*
- Q** *Are you receiving full benefit from Pension and Profit Sharing/Tax Shelters?*
- Q** *Do you need a Keogh Plan with higher contribution limits?*
- Q** *Are you receiving Maximum Tax Benefits from fringe benefits?*
- Q** *Are you planning the most effective ways of reducing your Estate Asset Tax Liability?*

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



John E. Lyons
MIDWEST PENSION PLANNERS

Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913/235-5305

A character all its own.



Valium (diazepam/Roche)
is a benzodiazepine with a
character all its own.

Pharmacologically, it is a potent skeletal muscle relaxant and anticonvulsant (in adjunctive use), as well as an antianxiety agent. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

But the individual character of Valium is even more apparent clinically than pharmacokinetically. And far more significant. That's because of the patient response obtained with Valium. A response which brings a calmer frame of mind. A response which has a pronounced effect on the somatic symptoms of anxiety, particularly muscular tension. A response which helps the patient feel more like himself again because of the way Valium reduces the overwhelming symptoms of anxiety and psychic tension.

Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving, operating dangerous machinery or the simultaneous ingestion of alcohol.

Unquestionably, many psychotherapeutic agents, including other benzodiazepines, have antianxiety effects. But one fact remains: you get a certain kind of patient response with Valium. It's a response you want. A response you know. A response you trust as part of your overall management of anxiety and psychic tension.

Valium[®] ^{IV}
diazepam/Roche
2-mg, 5-mg, 10-mg scored tablets
**a prudent choice in psychic
tension and anxiety**

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium[®] (diazepam) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose[®] packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available singly and in trays of 10.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

WHY SHOULD A PHYSICIAN BE CONCERNED ABOUT HOSPITAL MANAGEMENT?

Because we think it affects your patient's care.

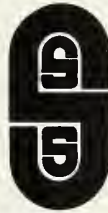
Employee confidence in hospital management improves morale and attitude: two major prescriptions in the care your patients receive.

Shared Service Systems, a non-profit organization of over 90 health care institutions in the Midwest, can provide complete management for your facility including a highly trained administrator and back-up support if and when required.

At Shared Service Systems, our management philosophy is to provide effective modern management to your hospital so that your patients will continue to receive local, cost effective health services.

We thought you should know about us.

for more information
contact



SHARED SERVICE SYSTEMS
1725 So. 20th Street
Omaha, Nebraska 68108
or Phone: (402) 346-9008

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

ALDOMET[®]

(METHYLDOPA/MSD)

TABLETS: 500 mg, 250 mg, and 125 mg



MSD
MERCK
SHARP
DOHME

Copyright © 1979 by Merck & Co., Inc.

Tenuate[®]
(diethylpropion hydrochloride NF)

Tenuate Dospan[®]
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle, the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache, rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in the evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine[®]) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell[®]

References: 1. Citations available on request—Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M.: A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

8-3921 (1587A)

**Overweight may not always be simple...
complications can develop*.**

Complicated or not...

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)**

75 mg. controlled-release tablets

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict appetite control and a successful program of weight reduction may tend to diminish the incidence or severity of the complications in some patients. Diethylpropion hydrochloride has been reported useful in such patients and while it is not suggested that Tenuate itself in any way reduces the complications of overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. **Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.**

In uncomplicated overweight.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

*Studies have shown that obesity is associated with an increased incidence of hypertension, symptomatic heart disease, adult-onset diabetes, and other diseases.

Merrell



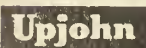
For prescribing information see opposite page.

new
600 mg tablets
Motrin[®]
ibuprofen, Upjohn

More convenient for
some of your patients.

Now there are three
Motrin tablet strengths
to choose from—

600 mg, 400 mg, and 300 mg



The Upjohn Company
Kalamazoo, Michigan 49001, U.S.A.

© 1979 The Upjohn Company

J-6999-4

April 1979



Tagamet[®]

brand of

cimetidine

How Supplied:

Pale green 300 mg. tablets
in bottles of 100 and Single Unit Packages of 100
(intended for institutional use only).

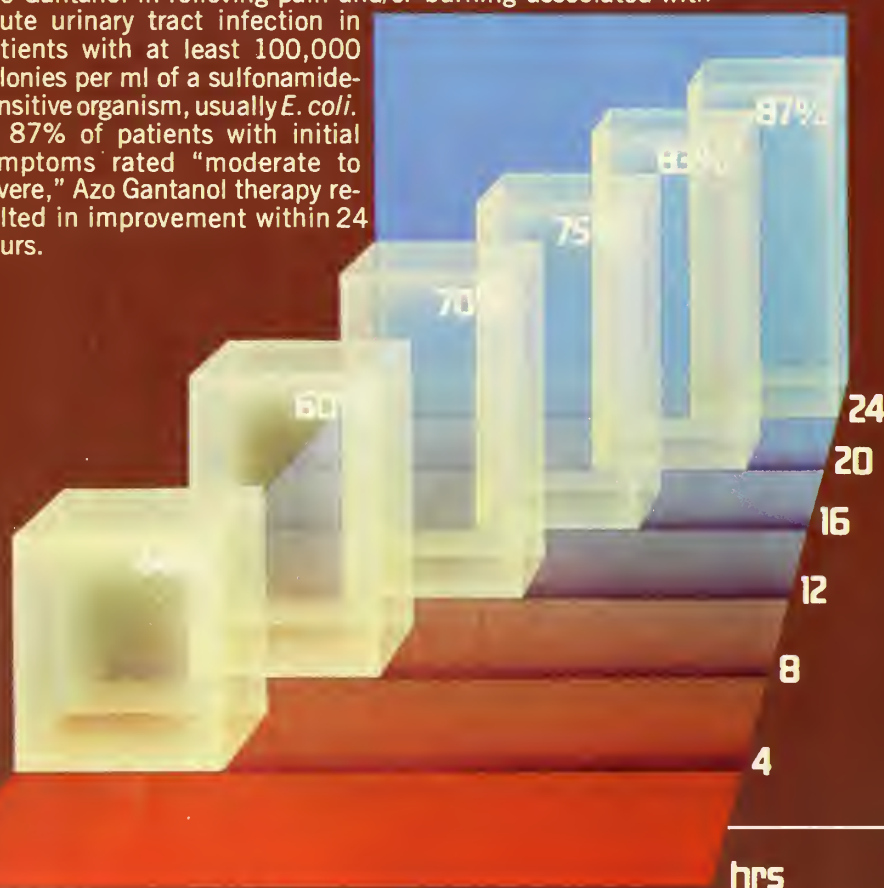
Injection, 300 mg./2 ml.,
in single-dose vials
and in 8 ml. multiple-dose vials,
both in packages of 10.

SK&F LAB CO.
a SmithKline company

Important data on the pain of acute cystitis:

In 87% of patients studied (303 of 349), Azo Gantanol® reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli*. In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Fast pain relief plus effective antibacterial action

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for
the pain

for
the pathogens

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note:** Fully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; aminobenzoic acid to follow-up culture media, increasing frequency of resistant organisms limit the usefulness of antibacterials including sulfonamides. Measure sulfonamide blood levels; variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pain, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. **Usual adult dosage:** 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists causes other than infection should be sought. After relief of pain has been obtained, continue treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.



Roche Laboratories
Division of Hoffmann-La Roche
Nutley, New Jersey 07110

“Competitive Foods”

USDA Public Hearings on Sale in Schools

PETER BARTON HUTT, LL.M.,* and A. ELIZABETH SLOAN, Ph.D.†

IN THE *Federal Register* of December 15, 1978 (43 *Fed. Reg.* 58780), the United States Department of Agriculture (USDA) announced three hearings during January and February to discuss the regulation of “competitive foods” in schools that participate in the National School Lunch Program. Interested persons may also submit written comments to the USDA.

Background

The purpose of the public hearings is to determine whether USDA should exercise its legal authority to regulate the type of food that may be sold in schools and thus compete with food provided under the non-profit programs established under the National School Lunch Act and the Child Nutrition Act. The issues specified in the USDA notice cover the most important and controversial questions currently being debated respecting the relationship between diet and health.

Prior Regulation of Competitive Foods

In 1970, Congress authorized USDA to regulate food sold in schools that competes with the Type A lunch offered under the National School Lunch Act and the Child Nutrition Act. USDA regulations adopted at that time limited food items sold in schools to those which either contributed to the required Type A meal pattern or were served as an additional item with the Type A lunch. Under this approach, any dessert, snack item or other food that a school sometimes served with the Type A lunch could also be sold as a competitive food in the school. USDA has stated that this approach effectively eliminated soft drinks from most schools and reduced candy sales to a lesser extent.

In 1972, Congress amended the USDA authority over competitive foods to exempt the sale of any food where the proceeds inured to the benefit of the school or school organizations. This had the effect of

returning to state and local officials the exclusive power to regulate the sale of competitive foods in schools.

In 1977, Congress modified this exemption and authorized USDA to approve, by regulation, those foods that may be sold in school in competition with the Type A lunch.

The 1978 USDA Proposal

In the *Federal Register* of April 25, 1978 (43 *Fed. Reg.* 17476), USDA published a proposed regulation to implement the 1977 law. The proposed regulation would have banned soft drinks, certain frozen desserts, candy and chewing gum from sale on school premises until after the last lunch period.

After reviewing the comments, USDA announced that in view of the fundamental questions raised in the comments, it was necessary to provide for additional opportunity for comprehensive public participation in the rule making process. Accordingly, USDA withdrew that proposal and announced the three public hearings and the additional time for written comment prior to issuing a new proposal.

The Issues Specified by USDA

The notice published in the *Federal Register* of December 15, 1978, contains six pages of detailed discussion that sets forth both the general background considerations and specific questions relating to the issues involved in regulating competitive foods.

The Regulatory Standard

The USDA notice describes three regulatory standards that could be used to regulate competitive foods either singly or in combination and specifies several questions that should be considered for each of those standards.

A. Food Composition Standard. The first alternative in the USDA notice would be to set a standard on the basis of food composition, i.e., by the levels of ingredients such as sugar, salt, fat, etc., contained in a given food. Under this approach, USDA would set maximum levels for one or more of these components to determine acceptable food items.

* Mr. Hutt, former Chief Counsel of the U.S. Food and Drug Administration, is a partner of the law firm of Covington and Burling, Washington, D.C.

† Dr. Sloan is Manager of Nutrition Education and Communication Services and Editor of *Contemporary Nutrition*, General Mills, Inc.

Some of the questions specified by USDA respecting this alternative are as follows: Will establishing maximum levels of components result in the exclusion of foods considered by some to be nutritious? Which components should be considered and how high or low should the levels be? How should sugar and/or fat be defined and should added sugar/fat/salt be considered in a different light from naturally occurring sugar/fat/salt? If individual foods are assessed against such a standard, should that preclude grouping foods into a category which would be restricted?

B. Nutrient Standard. The second alternative in the USDA notice would be to set a standard based on specified nutrient content, i.e., vitamins, minerals and protein. Under this approach, only those particular foods which have a specified level of specified nutrients or a specified nutrient density (the nutrient content in relation to its caloric value) would be permitted.

Some of the questions specified by USDA respecting this alternative are as follows: Does exclusive consideration of nutrients ignore other important issues such as levels of sugar, fat or salt? Which of the 44 nutrients and trace minerals should be measured? Would this approach lead to the fortification of foods not now fortified and should this be an issue of concern?

C. Meal Standard. The third alternative in the USDA notice is the balanced meal standard under which any "competitive food" would be permitted to be sold if it were also served as part of a Type A meal. For example, if a school served cookies or ice cream as dessert items with a meal, it could also sell these items as competitive foods.

Some of the questions specified by USDA respecting this alternative are as follows: What meal should be the standard — the Type A lunch, a sandwich and beverage service or some other type of meal? Should the standard approve as competitive foods only those which the Type A meal pattern requires: meat or meat alternative, fruit or vegetable, milk, and bread? (This would eliminate most dessert-type foods as well as such items as yogurt, seeds and nuts because these foods are not now part of the required Type A lunch although they are sometimes served by a school with lunch.) Should the standard approve as competitive foods those foods which the school serves along with the meal (essentially the standard in effect in 1970)?

Other Factors. In addition to these three standards, USDA has raised questions about other regulatory aspects of the matter. Should a competitive foods rule also apply to foods served as part of

the school lunch? (For example, if a rule were to eliminate candy and cake as competitive foods, would that necessarily mean they could not be served as lunch desserts?) Should a restriction apply only to meal periods, to an hour before and after meals or to an entire day?

Related Considerations

In addition to the regulatory aspects, the USDA notice specifies four related factors on which public response is also sought.

I. Nutrition Education. The USDA notice states that one purpose of the 1977 law was to have the nutrition education information provided to children in the classroom reenforced by experiences in the lunchroom. The notice states that the school lunch program is an opportunity to offer model meal patterns and the competitive foods rule may be an opportunity to offer model snacks. The notice states that because snacks may form a considerable part of the diet for many people, especially young people, it may be particularly important that good snacking habits be exemplified in the schools.

Some of the questions specified by USDA respecting nutrition education are as follows: Which of the alternative regulatory standards (or a combination of standards) set out above best addresses nutrition education? Are children more likely to put the principles of nutrition that they are taught in the classroom into practice if those practices are followed by adults (i.e., parents, teachers, and school authorities)? How can schools best provide examples of meals and snacks that are consistent with the principles of nutrition taught in the classroom? Does the availability of foods within a school affect a child's perception of the acceptability of these foods? Will the time certain foods are offered (before lunch, after lunch, all day) convey "messages" to children about these foods?

II. Health. A second related factor identified in the USDA notice is the effect of overconsumption and poor food choices on health. The notice discusses the relationship of sugar, salt, fat and fortified foods to health. The notice states that associations between diet and disease have been widely publicized and there is sufficient evidence to relate diet to well-being, but there is debate about how diseases are caused or affected by specific dietary practices.

Some of the questions specified by USDA respecting health are as follows: Which of the alternative regulatory standards (or combination of standards) described above best addresses the health issues? Should diet-related issues (including the consumption of sugar, fat and salt) be considered in a

discussion of competitive foods? Should the issue of fortification be considered in approving competitive foods? Because there is no evidence that reducing levels of sugar, fat and salt in the diet are harmful and there is some indication that such reduction may be helpful, is this sufficient reason to consider those factors in approving competitive foods? Is it reasonable to make decisions regarding the sale of competitive foods on the basis of potential health implications? Will the foods that a child eats be a determining factor for health status in later life?

III. *Eating Habits.* The USDA notice states that one reason that the competitive food issue is a controversial one is that eating habits are a personal matter. Eating habits include what people eat, where, when and with whom. Snacking habits are one part of the broader area of food habits. The notice states that for many people, snacking has negative connotations but a snack can consist of almost any kind of food and does not necessarily contain excessive calories. Of concern is which foods comprise the snacks. The notice states that if children are to have the opportunity to snack in the schools, it may be important to determine what foods should be available.

Some of the questions specified by USDA respecting eating habits are as follows: Which of the alternative regulatory standards (or combination of standards) described above best addresses the issues relating to eating habits? Why do children snack and is it important for them to snack? What constitutes a balanced diet and what constitutes a "good" snack? Does the consumption of some foods before meals (e.g., foods high in sugar or fat) limit the consumption of other foods or result in a diet which is not balanced? Should approved competitive foods be available all day in the school or, if not, when should they be available? Do the meals served in your school satisfy the children? Is it important for children to have the opportunity to purchase food at school other than complete meals? Should different snack foods be made available to children of different ages? What foods should be available for snacking in school?

IV. *Local Administration and Impact.* The USDA notice notes that local and state officials will carry out the final regulations and, thus, local impact must be considered in designing the regulations. Such local concerns include the feasibility and enforceability of the requirements, the effect on the child's overall food consumption and the availability of profits from the sale of competitive foods for school social activities, equipment or uniforms.

Some of the questions specified by USDA re-

specting local considerations are as follows: Which of the alternative regulatory standards (or combination of standards) described above best addresses these local considerations? Should USDA or the states establish the standards or should no action be taken on this matter? How and to what extent should students, parents, teachers, principals and school boards be involved in the decision-making process? Would school lunch participation and/or plate waste increase or decrease if certain competitive foods were not sold on school premises? Would children leave the school premises to buy competitive foods that are not sold in the school? If competitive foods were restricted in elementary schools but not in junior and senior high schools, would this restriction cause those food items to be more attractive to younger children? Would schools drop out of the National School Lunch Program to continue providing all competitive foods to children? Do schools use the profits from food sales to buy textbooks, band uniforms, athletic equipment, etc., and could they substitute other sales if certain foods were restricted in schools? What are the administrative concerns with regard to each of the alternative regulatory standards described above?

Conclusion

The issues raised by USDA in this notice cover many of the important questions respecting sound dietary habits, reasonableness of government restrictions on consumer free choice, the effectiveness of nutrition education and the optimum nutritional composition of fabricated foods that pervade the field of nutrition today. Thus, they extend far beyond the matter simply of regulating competitive foods in schools and represent the first attempt by any government agency to review and establish regulatory requirements with respect to the far broader issues of the relationship between diet and health.

Reprinted with permission from *Nutrition Policy Issues*, February 1979, No. 4, published as a public service of the Nutrition and Governmental Relations Departments, General Mills, Inc., P.O. Box 1113, Minneapolis, MN 55440.

**USE YOUR MEDICAL
LIBRARIES**

**YOUR LIBRARIAN WILL BE
HAPPY TO ASSIST YOU**

If the AMA didn't speak for the profession, who would?

Who would speak for the profession on the 2,500 health bills introduced in every Congress? Or the regulations issued by federal agencies?

Who would state the profession's views on national health insurance? Utilization Review Regulations? The Health Planning Act of 1974? Maximum Allowable Cost Regulations? Health Manpower?

Who would provide the scientific input and the practitioner's experience and knowledge so essential to legislation on drugs, cancer, heart disease, communicable diseases? Can you think of anyone?

The fact is, there is only one organization that can — and does — speak for the profession as a whole. The AMA.

It does so to protect the basic freedoms of medical practice in any federal health program that might be enacted; and even more important, to promote legislation for better health care for the entire public.

The AMA's voice can only be as strong as the members of the profession choose to make it. With your support, the AMA can be even more effective spokesman.



Join us.

We can do much more together.

Dept. of Membership Development
American Medical Association
535 N. Dearborn St./Chicago, IL 60610

Please send me more information on the AMA
and AMA membership.

Name _____

Address _____

City/State/Zip _____

★ *Specialized Service*

PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction

Since 1899

**THE
MEDICAL PROTECTIVE COMPANY**

FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222

Something Missing?



Keeping Patients Comfortable...



When your patient is
most relaxed . . . you
are most effective.

Patient comfort, along with your
comfort, are prime considerations
in this examination table.

Places patients in the positions
best for your work, with least discomfort for you.

Whether you are setting up your first office, or are ready
to re-equip . . . whether you lease or buy, with time plans
available . . . let Goetze-Niemer's helpful professionals
work with you.

GOETZE-NIEMER CO.

P.O. Box 136 — 1701 Brooklyn / Kansas City, MO 64141
Phone: 816-231-1900

HOSPITAL AND SURGICAL SUPPLIES—SINCE 1884

NEW 2½ DAY

RHEUMATOLOGY TRAINEESHIP . . .

It will pay you to attend a Rheumatology Traineeship at the University of Kansas Medical Center. The Traineeship is a cooperative program offered by the Kansas Chapter of the Arthritis Foundation and Kansas University Medical Center, designed to help you in the diagnosis and treatment of rheumatic diseases. You will earn important credits toward satisfying your continuing education requirements.

There are 20 credit hours for the 2½ days. The courses will be conducted the following dates: September 13-15, 1979 and May 15-17, 1980.

An effort will be made to furnish physician coverage through the "locum tenens" program of the Health Care Outreach program at K.U.M.C.

The Rheumatology Traineeship is open to all physicians practicing in Kansas, but only a limited number can be accepted. Registration fees and a rheumatology textbook are furnished by the Kansas Chapter of the Arthritis Foundation. Meals and lodging are the responsibility of the physician.

For more information and application forms, contact Charles C. Blackwell, Executive Director, Kansas Chapter of the Arthritis Foundation, 1602 East Waterman, Wichita, Kansas 67211; or call (316) 263-0116.

(PLEASE PRINT OR TYPE)

NAME _____
(Last) (First) (Middle)

PRESENT ADDRESS _____

TELEPHONE _____
(City) (State) (Zip)



The Myelomeningocele Patient

A Multidisciplinary Approach to Care

MARC ASHER, M.D.; JOYCE OLSON, R.N., M.S.;
JOHN WEIGEL, M.D.; ROBERT MORANTZ, M.D.; JAMES HARRIS, D.O.;
BRUCE LEIBERMAN, M.D.; and WALLACE WHITNEY, C.O.,
Kansas City, Kansas

MYELOMENINGOCELE is a congenital nonfusion of the dorsal arches of the spine associated with a cystic lesion containing neural elements. It is the most severe form of spina bifida and results in varying degrees of bowel, urinary bladder, and lower extremity paralysis. In addition, hydrocephalus occurs in approximately 90 per cent of these patients. The cause is unknown.

Myelomeningocele is considered to be the most severe congenital deformity consistent with life. However, before treatment was developed, few of these infants survived. Since the advent of antibiotics, surgical closure of the sac, and especially the development of ventricular shunting for the treatment of hydrocephalus, survival rate has increased from less than 20 per cent to about 80 per cent. Patients surviving as a result of modern medical care are more severely involved than natural survivors. Because of the multiple system involvement, many different specialties are involved in their care.

The magnitude of this problem first became apparent in Great Britain where the incidence was as high as 4/1000 live births. Many multidisciplinary clinics were established to coordinate care, conserve parent-patient-specialist time, and foster information sharing.

Address reprint requests to Dr. Asher, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

In the United States, the incidence appears to be between 1 and 1.5/1000 live births. For Kansas, this represents 37 to 55 new cases/year. Because the medical needs of these patients are unending, the markedly-improved survival statistics cited earlier soon result in a large patient population under treatment.

In response to an increasing number of survivors with myelomeningocele, a multidisciplinary clinic was established in 1965. The result has been improved continuity of patient care, communication among all involved, and conservation of both patient (family) and professional time.

UKSM Paraplegia-Spina Bifida Clinic

Development. Recognizing these factors, steps were taken to establish a multidisciplinary clinic at UKSM. The local pioneers were Drs. Leonard Pel-tier, orthopedic surgeon, Charles Brackett, Neurosurgeon, and Donald Rose, physiatrist. In 1965, this team visited several multidisciplinary care centers in Great Britain. The trip was sponsored by the Kansas Society for Crippled Children with of-

fices in Wichita. Upon their return, a multidisciplinary paraplegia-spina bifida clinic was established. Meeting each Thursday afternoon, the clinic has been continuously functional since.

Initially, orthopedic, urological, neurosurgical, and orthotic services were provided. As needs became apparent and talent became available, other services have been added, including physical therapy, physiatry, and pediatrics on a regular basis, and other services on call. The most important single addition occurred in 1974, when a clinical nurse specialist became available to coordinate the clinic. The weekly assemblage of such a mass of specialized talent is a tribute to the basic commitment of each of the services involved.

Patient Entry and Followup. Most patients enter as newborns transferred from another nursery. Whether or not to treat the infant is the first decision to be made. Sharing in this decision are the neurosurgeon, pediatrician, clinical nurse specialist, family, and sometimes, the clergy. The decision should be made rapidly, as early sac closure is mandatory to prevent infection and preserve function. Infants with high defects and severe hydrocephalus have a very poor prognosis for functional survival. When presented with this prospect, some parents elect against sac closure and ventricular shunting. This means the parent will provide standard infant care in anticipation that the infant will not survive. Following such a policy, most infants will be treated. This appears to be the standard practice in the United States today. In order not to expend scarce and expensive resources on children not likely to become functional individuals, other countries have pursued a more aggressive policy of treatment selection. For instance, in Melbourne, Australia, a policy of treatment selection based on demand feeding has resulted in active treatment currently being provided to 60 per cent of infants, whereas earlier this was 73 per cent.

In addition to sac closure, and ventricular shunting if necessary, the newborn should be evaluated by specialists in orthopedics and urology. The clinic coordinator will use this period to educate the family about the baby's deformity, make contacts with funding agencies such as the Kansas Crippled Children's Program, and if the parents consent, make contact with the parent support group — locally the Greater Kansas City Spina Bifida Association. Meeting monthly on Friday evening, this parent advocate group provides extensive informational and supportive services for the new parent.

Other patients may enter the clinic by transfer from another area or by referral. These new patients are evaluated by each of the services offered.

For followup, most patients are seen every three or four months. A few with repeated problems are seen more often and a very few, only once or twice a year. If x-rays are needed, the patient is scheduled for these earlier in the day with results available for the clinic visit. During the clinic visit, the patient is seen by all services required at that time. Preclinic chart review assists in determining services needed and preventing gaps in care. A post-clinic review conference is desirable.

Clinic Data. Individual records are maintained on each patient to allow continual monitoring and update of patient status. We have summarized our experience for patient population, incidence of shunting, level of paralysis, urological management, and intelligence quotient (IQ).

As of December 1978, 116 patients with myelomeningocele are being followed. There are 51 females and 65 males, with an age range from four months to 42 years. Sixty-seven (58%) are under 10 years of age, and 13 (11%) are 21 years of age or older. This documents the increasing survival rate.

Of 103 patients less than 20 years of age, 75 per cent have had ventricular shunting for hydrocephalus. Of course, none of the patients age 21 and over were shunted, as shunting was not available for that group.

The level of paralysis is determined by the lowest level of antigravity motor function. Thirty-three (28%) have thoracic-level paraplegia (no motor function of the lower extremities). Thirty-four (29%) have upper lumbar paraplegia (motor function down to and including knee extension). Thirty-one (27%) have lower lumbar paralysis (motor function including knee flexion and/or ankle dorsiflexion). Fourteen (12%) have sacral-level paraplegia (motor function including ankle plantar flexion and sometimes intrinsic function as well). Four (3%) had no limb paralysis but had urinary bladder involvement. In general, there should be more survivors with sacral paraplegia than with any of the other levels. The disproportionately small number of sacral-level paraplegics in our population is believed to be a reflection of the referral nature of our Center and the fact that sacral-level paraplegics are less in need of the many services offered in a multidisciplinary clinic.

In our current population, 35 patients are incontinent or use Credé techniques. Many of these are very young children though some are in the older age groups. There are 32 patients with ileoconduits, nine with colon conduits, 19 on an intermittent catheterization program, five with indwelling catheters, five with vesicostomies, and one with a ureterostomy.

Ten of the patients are continent, either without urologic involvement or through a program of regular voiding.

As a means of determining a rough IQ estimate of our population, the Peabody Picture Vocabulary Test was administered to 73 patients over the age of five years. The score range was 66 to 139, with an average of 99.

The Team Approach

In the section that follows, a brief description of the services offered is described. For many patients, especially those from out of town, the team does not assume the role of day-to-day general medical care, and an effort is made to keep the primary care physician informed.

Clinic Coordinator. With so many specialists involved it is essential that some centralized planning occur in order to prevent fragmentation of care. The coordinator functions to improve communication between the many specialists involved, provides continuity in care, and facilitates followup. Although any member of the team may assume the role of coordinator, in practice, the clinical nurse specialist or the pediatrician is best equipped for this role.

Neurosurgery. In the newborn, the neurosurgical workup should include, in addition to a complete general physical examination, evaluation of the sac, check for hydrocephalus, and evaluation of neurological function. The sac should be evaluated for size, location, and presence or absence of leaking fluid. Once examined, the sac should be covered with sterile gauze soaked in physiological saline. The presence or absence of hydrocephalus should be checked by head circumference measurement, downward displacement of the eyes, dilation of scalp veins, and tension of the fontanelles. Neurological levels should be checked by observing motor function of the lower extremities by painfully stimulating the patient above the level of the lesion. A gross estimate of sensation in the lower extremity can be made by observing the infant's facial expression in response to pinprick.

Radiologic workup should consist of a chest x-ray, skull x-ray, and plain x-ray of the spinal column. In addition, a CAT scan of the head is extremely useful.

In patients for whom a decision to operate has been made, it is desirable to close the spinal defect as soon as possible, if infection is to be prevented. If the infant is seen several days after birth and the surface of the sac cannot be considered sterile, immediate operative closure should not be considered, since

meningitis will almost certainly ensue and breakdown of the wound will occur. The goal of prompt surgery then, is not to improve the neurological deficit, but rather to prevent life-threatening meningitis and prevent further loss of neurological function.

The goals of operation are threefold: first, to replace the dorsally-displaced nervous tissue into the vertebral canal; second, to achieve a water-tight closure of the sac; and third, to cover the spinal defect as securely as possible with available muscle, fascia, and skin. The operative repair in each case will have to be individualized depending on the size, location, and degree of skin covering of the particular lesion.

Quite commonly, there is a rapid increase in hydrocephalus following operative repair of the sac. Therefore, the patient should be evaluated for hydrocephalus by means of a CAT scan as soon as possible after surgery. In most cases, hydrocephalus is treated by ventricular peritoneal shunting approximately one week after the initial closure of the defect. The child should be periodically evaluated by both clinical examination and CAT scan to ensure that the shunting system is functioning adequately.

Orthopedics. The ultimate goal of orthopedic care is to promote mobility. This is accomplished by preventing and correcting deformities of the spine and the lower extremities, preserving functional motion of the hips and knees, and balancing existing muscle forces. The tools available are physical therapy, bracing, and surgery.

Virtually all children are stood at about 18 months of age. For the thoracic, upper lumbar and lower lumbar paraplegics, bracing is required. Such therapeutic standing and ambulation promotes balance, lower extremity bone and soft tissue development, upper extremity strength, pulmonary function, and urinary drainage. It is anticipated that virtually all thoracic-level paraplegics will cease functional ambulation in their preteen years and the same for upper lumbar paraplegics during their teenage years. Functional wheelchair mobility, including independent transfer, should remain a goal for all of these children, unless of course, severe upper extremity involvement or marked obesity occurs.

At the ankle-foot level the most serious deformity is talipes equinovarus. This is initially treated by padded serial plasters and sometimes accompanying percutaneous tendo-Achilles lengthening. Usually, sometime before bracing, complete correction is obtained by a one-stage posterior medial release. In the older child with stiff residual deformity, a talcotomy or a triple arthrodesis may be necessary depending upon the age. Severe pes planus is treated by

extra-articular subtalar arthrodesis or inlay triple arthrodesis, again depending upon age. Excessive calcaneus deformity is treated by anterior release. Spastic contractures most commonly of the peroneals are treated by tendon resection. Cavus feet with claw toes (intrinsic minus posture) are treated by toe proximal intraphalangeal joint fusion and transfer of the long toe extensors to the metatarsal necks.

Troublesome tibia valgus or external torsion is corrected by osteotomy and internal fixation.

Knee extension contracture is treated by serial plaster and if resistant, quadricepsplasty. Knee flexion deformity is treated by posterior release of the hamstrings and joint capsulotomy.

The treatment of hip subluxation and dislocation is the most controversial. In patients with thoracic-level paraplegia, release of soft tissue contractures is accomplished with no effort at maintaining normal hip anatomy. With lower lumbar paraplegia a policy of hip joint preservation utilizing open reduction, femoral and/or pelvic osteotomy, and release of overpowering tendons has been followed. With upper lumbar paraplegia, care has been individualized between these two approaches depending on the functional capabilities of the patient.

Scoliosis between 20 and 50 degrees is treated by bracing with a polypropylene body jacket. When much greater than 50 degrees, a two-stage surgical correction is performed, utilizing when possible Dwyer instrumentation anteriorly and Harrington instrumentation posteriorly. Flexible kyphosis is initially braced and subsequently treated with anterior spine fusion. Rigid kyphosis requires resection of the deformity.

Urology. Patients with myelodysplasia associated with spina bifida usually have some degree of neuropathic bladder dysfunction. Clinically, they are either "leakers" or "holders." The former lose urine with laughing, straining, or changing position. The latter void incompletely and require assistance in voiding. Urologic problems may first manifest themselves with urinary tract infections.

Patients with myelomeningocele have varying degrees of involvement of the nerves affecting voiding. This may include simple weakness of the bladder detrusor muscle, normal bladder innervation, or bladder hyperreflexia secondary to loss of inhibitory fibers. The sphincteric mechanism may be hyperreflexic, normal, or hypoactive. Various combinations of these may exist in the same patient. Hence, a weak bladder may coexist with an overactive sphincter which compounds the problem in voiding, or could exist with a normal or weakened sphincter which would allow voiding, particularly with su-

prapubic pressure, and could result in incontinence. An overactive sphincter will inhibit normal voiding, regardless of bladder function.

The goals of management are to preserve upper tract function and develop a program whereby the patient remains dry and free of infection.

It is frequently difficult to sort out the specific neurologic defects during infancy and early childhood. A urodynamic workup needs to include a cystometrogram to measure bladder capacity, sensory function, voiding pressures, bladder reflexes, and the ability to inhibit them during maximum filling states. Activity of both smooth and striated muscle in the bladder neck and posterior urethra are evaluated by means of urethral and sphincteric pressure studies and urethral EMGs. Appropriate urodiagnostic studies include excretory urography and voiding cystourethrography.

It is imperative, initially, to determine whether bladder damage has occurred, if there is vesicorenal reflux, and whether renal damage has occurred. Reflux and infection pose a potentially lethal combination and act to cause progressive renal deterioration which is not reversible. Isotope studies can be done after initial evaluation to follow some aspects of the problem, with a decreased dose of radiation and cost to the patient.

Pharmacologic manipulation of bladder and sphincteric function may be helpful and in the less severe cases, may successfully handle the problem, at least for a time.

The use of Credé or suprapubic pressure maneuvers risks causing bladder damage and reflux by undue increases in intravesical pressure.

The use of intermittent catheterization has revolutionized the treatment of many of these children. Many children as young as five or six years of age can be taught self-catheterization. This is done using simply a "clean technique" that carries no increase in the risk of infection over efforts at totally sterile techniques. Implantation of artificial sphincteric devices is relatively new and has been used successfully in some children with neuropathic bladder and sphincteric dysfunction.

Urinary diversion is necessary in some patients and probably will continue to be an integral part of the treatment of patients who fail on conservative methods and in whom renal function is deteriorating or is at risk. Availability of the enterostomal therapist has made a tremendous difference in the outlook and quality of life for children with urinary diversion.

Older children and young adults with these disorders require considerable guidance and advice re-

garding sexual function. Erectile difficulties may occur in the male, secondary to parasympathetic nerve defects, and ejaculatory impotence may occur if the sympathetics are involved.

A coordinated plan for the management of these patients including appropriate urologic treatment is essential.

Pediatrics. The pediatrician has recently been added to our team. He can add his special expertise in the areas of well child care (preventive medicine), knowledge of motor, cognitive and psychosocial development, and evaluation and treatment of various health problems — especially as they relate to the always-present problems associated with myelomeningocele. Genetic counseling is needed for both the parents of the infant or child and for the adolescent and young adult; the pediatrician can facilitate this aspect of care, and may also fill the role of coordinator who can listen to the parents' problems and concerns and convey the advice of various team members.

Clinical Nurse Specialist. In addition to serving as clinic coordinator, the nurse serves as primary contact person for patients/parents and follows all children in the inpatient area to facilitate program maintenance and care continuity. Support of the family unit, counseling, anticipatory guidance, clarification of ongoing programs, and involvement of the family in care are ever-present needs. Facilitation of growth and development and well child care need to be considered. With the recent addition of the pediatrician, many areas of need can be better met.

Other functions include teaching the patient/family the techniques of clean intermittent catheterization and record keeping, fitting the male child for external urinary appliances if indicated, and assisting in the urostomy appliance management. The child is encouraged to develop maximum independence and assume responsibility for management of these programs and appliances.

A major task has been the development of a bowel training program. Bowel incontinence is a major social problem that often prevents the child from participating in school and other activities. The goal of bowel training is to create a conditioned bowel reflex pattern for the patient. This is begun when the child is two and one-half to three years of age and is accomplished through establishing diet patterns and a specific evacuation time, the use of medications for stool softening, and suppositories for stimulating evacuation.

A dry, formed, and firm stool is necessary. Dietary management to attain stool consistency is preferable to medication. Maltsupex can be added to

infant formulas; foods that provide roughage and bulk should be encouraged in the child's diet; and All-Bran cereal in small amounts on a daily basis has been effective. Adequate fluid intake is essential for this program as well as for urinary tract management. Stool softeners such as Colace and Senokot can be used if needed. Glycerine suppositories are only rarely effective; Dulcolax suppositories are frequently used in initially establishing a pattern. Enemas should be avoided and used only if other efforts have been unsuccessful. Optimal timing is after a meal to take advantage of the gastrocolic reflex and any normal peristaltic function. The child's program must be designed to fit into family routines and time frames if parents are to be expected to carry it out. Patience, ongoing monitoring, and alterations in the program are required if maximum control is to be attained.

Finally, communication with community agencies, community health nurses, and school personnel is necessary and can best be coordinated through one member of the team. The nurse or pediatrician can probably best facilitate this communication.

Orthotics. The orthotic needs of these patients are extensive and include braces, walkers, crutches, and wheelchairs or wheelchair surrogates.

Braces are utilized to provide positional control, corrective forces, or functional support of the trunk and legs. Positional control often begins in infancy and consists of holding the lower extremities and spine in a functional position. Corrective and functional bracing begins about the time the patient begins to stand.

Spine deformities are initially treated with a polypropylene thoraco-lumbosacral orthosis (TLSO). Paralyzed lower extremities are supported by leg braces. Thoracic-level paraplegics require hip-knee-ankle-foot orthoses (HKAFO), with locked or restricted motion hip joint, locked knees, and ankles fixed at neutral. Upper lumbar paraplegics initially require similar bracing but may eventually be able to have unlocked hip joints, offset knee hinges, and elastic hip and knee extension assists. Both of these groups may initially benefit from a Parapodium, a platform device designed for maximum trunk, limb, and standing control. Lower lumbar paraplegics initially require knee-ankle-foot orthoses (KAFO) but may progress to ankle-foot orthoses (AFO) depending on the strength of knee control. Sacral-level paraplegics require, at most, polypropylene shoe inserts. In most instances, lace-to-toe shoes are desirable to assure proper toe placement.

Stainless steel and aluminum braces are to some

extent being replaced by polypropylene. The advantages are weight reduction and allowance for a wider range of more normal foot wear.

Wheeled assistive devices include strollers, wheelchairs, and wheelchairs. Even though all patients are initially stood with bracing as necessary, and ambulated, many patients will eventually become nonfunctional ambulators. For these, a well-fitted wheelchair presents an acceptable alternative means of mobility.

Physical Therapy. The major goal of the physical therapy program is to teach the techniques to patient and family that will maximize function and independence. The therapist is involved early in the assessment of muscle function and in teaching parents the exercise program for daily use at home. Preparation of the patients for standing and walking requires the attainment of head and sitting balance and upper extremity strengthening. Teaching and assisting the child and family as ambulation progresses then becomes a major focus. Independent transfer ability is a goal for both the ambulatory and nonambulatory patient. In addition, the physical therapist is closely involved in postoperative exercise and mobilization programs. As with all programs for these patients, family teaching and involvement are key factors.

Physiatrist. The physiatrist has long been involved with spinal cord injury patients and others requiring rehabilitation. He also has a role as the member of the team involved in the habilitation of the child with myelomeningocele. An evolving technique to aid in the assessment of these patients is electrodiagnosis. Electrodiagnosis (EDX) — consisting of nerve and reflex stimulation techniques and muscle action recording (spontaneous and voluntary) — is a major diagnostic examination which assists in the evaluation of the patient. The testing must be planned and directed by an experienced physician based on a careful history and physical examination. It is used to confirm and reinforce the clinical impression. It can help identify levels of functioning nerve fiber in the myelodysplastic child and allow for more accurate goal setting in program planning.

The physiatrist is also able to contribute his expertise in the areas of mobility assistance, independence in activities of daily living, bowel and bladder training, and vocational rehabilitation.

Social Service. The social worker is currently involved only as specific problems or needs arise. However, full team status is desirable as this individual could add a major component to ongoing care.

Dietitian. Dietary involvement is required for counseling relative to overall diet composition and

specifically for weight reduction diet planning. Excessive weight gain is a frequent problem with many of the children with myelomeningocele. Because of short stature, ideal weight must be calculated on weight for height rather than on norms for age.

Plastic Surgery. The plastic surgeon is involved in the care of these patients whenever skin grafting is required. This may be at the time of initial closure, in the management of decubiti, or in the management of burns or other significant skin wounds.

Psychiatry/Psychology. Individuals with expertise in these areas can be utilized to provide counseling and prophylactic care as well as ongoing treatment when overt problems arise. With the many stresses on patients and families and the increasing numbers of survivors who need to adapt and cope effectively, early assessment and ongoing intervention to maximize psychological functioning are imperative.

Habilitation

Educational Requirements. The Rehabilitation Act of 1973, and PL 94-142 — which became effective in 1978 — have significantly affected the educational programming for the handicapped child. An individual education plan must be developed for each child and services provided to meet the child's individual needs. Many of the children are being mainstreamed in the educational system. Communication with persons involved and input into the programming by those involved in the medical care are necessary. Most teachers, school principals, counselors, and nurses are willing to do what is necessary to facilitate function of the child in the classroom and incorporate ongoing programs into the child's school day. However, they need to understand the disease process and need for related programs if the experience is to be positive for both child and school.

As more children are surviving with intact intellectual function, greater attention must be given to the assessment of and intervention provided for problems of perceptual-motor function, specific learning disabilities, and others that interfere with optimum learning.

Vocational Habilitation. It is essential that both the patient and family begin early to consider vocational goals coupled with independent living skills. Little has been done in this area, either by professionals or by patients and families.

The adolescent must accomplish the tasks of consolidating his own identity, achieving independence from parents, establishing new love objects outside

(Continued on page 413)

Basic Clerkship

Students in Internal Medicine on a Community Clinical Campus

NANCY S. NOWLIN, M.D.,* and
DOUGLAS W. VOTH, M.D.,† Wichita

INCREASING ENROLLMENTS in medical schools have compelled practicing physicians and community hospitals to increase their participation in undergraduate medical education. The practice and thus the teaching of internal medicine in such settings provide opportunities that differ substantially from educational programs in university hospitals, the "traditional medical schools." This paper describes the development and conduct of an internal medicine clerkship for junior medical students utilizing Wichita hospitals and physicians practicing in the area. The philosophy and structure of the clerkship will be discussed and the student and faculty performances reviewed to date.

History of Developments and Resources

The University of Kansas School of Medicine-Wichita was established in 1972 in order to increase the number of medical students educated in Kansas. All students in the School of Medicine study the basic sciences on the Kansas City campus; one-fourth of the junior and senior classes elect to transfer to Wichita for the required and elective experiences in the clinical clerkships. The remainder of the class completes clinical rotations in Kansas City.

The first class of 14 students came to Wichita in January of 1974; at that time the junior clerkship in internal medicine lasted ten weeks and was taught in only two hospitals. Some modifications and expansions have occurred since then. A class of 50 students began its junior year in January, 1978. The junior medicine clerkship presently is 12 weeks long, six weeks served in each of two hospitals. The students are regularly assigned to hospital services staffed by residents in internal medicine, all of whom have been recruited with the recognized oppor-

tunities and challenges of supervising and teaching medical students.

In contrast to the internal medicine clerkships at

The increased participation of practicing physicians and community hospitals in undergraduate medical education has provided new and different opportunities. The development, conduct, philosophy, and structure of the internal medicine clerkship for junior students at UKSM-Wichita are discussed, and performances reviewed to date.

UKSM-KC, which includes a state-owned and operated hospital and well-established research programs, the Department of Internal Medicine of UKSM-Wichita is a community clinical campus, an educational institution without walls for junior and senior medical students and Internal Medicine residents. Currently, the resources for internal medicine education in Wichita include St. Francis Hospital, St. Joseph Hospital, the Veterans Administration (VA) Hospital, Wesley Medical Center, 520 practicing physicians, of whom 82 are internists, 44 residents in internal medicine, and a metropolitan population of 344,000. Each of the community hospitals has a medical library containing most of the standard reference texts in internal medicine and the subspecialties, ordinary references, and the more widely used English language journals. In addition, Wichita State University has a very good library.

The faculty of the Department of Medicine now consists of five full-time members at the VA Hospital, seven others with full-time responsibilities divided among the four hospitals, ten part-time members, and 84 volunteers. Most of the volunteer faculty are internists; some are in the related specialties of neurology, dermatology, and physical medicine. Most practice in Wichita, but 17 of them reside in other cities; as one might suspect, these physicians contribute to the clerkship in many ways.

From the Department of Internal Medicine, The University of Kansas School of Medicine-Wichita.

* Instructor in Medicine.

† Professor and Chairman, Dept. of Internal Medicine.

Address reprint requests to Dr. Nowlin, Dept. of Internal Medicine, UKSM-Wichita, 1001 N. Minneapolis, Wichita, KS 67214.

Methodology of the Curriculum

One full-time faculty member has primary responsibility for scheduling and coordinating the various activities of the clerkship; others staff three teaching services and make teaching rounds with the students at all four hospitals. Patient assignment and service organization with direct student supervision and teaching are duties delegated to full-time, part-time, and volunteer faculty who function as "primary attending physicians." These faculty are responsible for providing three new patients weekly who are suitable for assignment to the students, reviewing the students' work, and making teaching rounds three to five times per week. Other attending physicians assist by allowing students to interview, examine and follow some of their hospitalized patients, and by making selected teaching rounds. Certain highly capable part-time and volunteer faculty who have exceptional patience and teaching skills are asked to give short remedial courses for students who need special academic support.

During the 12 weeks of the clerkship, students interview and examine 36-40 patients, recording their findings on a standard data base form. Each assigned patient is followed daily throughout the hospital stay, and the students report pertinent data on rounds and write daily progress notes, using the problem-oriented medical records system.

The emphasis of the junior clerkship is on problem identification and solving rather than memorization of facts. The students learn to collect data from their patients, carefully performing histories and physical examinations, and reviewing thoroughly and regularly all items in the charts; the students are required to know all information in the record of each assigned patient. After collating the available information, the students attempt to organize and interpret these data, and thus define the patients' problems as clearly as possible. Subsequently, these students suggest approaches to the solution of these problems but, routinely, they do not write orders or otherwise assume responsibility for patient care.

Although the clerkship is distinctly patient-oriented, formal didactic-tutorial sessions are given twice weekly. The format is a 30-minute faculty presentation followed by a 15-minute discussion period. Most of the presentations are given by volunteer faculty; the list of topics is made up by the departmental curriculum committee. Some didactic-tutorials deal with the approach to a common patient problem, *e.g.* headache; some cover a specific disease, *e.g.* diabetes mellitus; and a few are devoted to teaching a skill, *e.g.* basic interpretation

of electrocardiograms. The responsibility for such lectures and discussions is rotated among the faculty members in the subspecialty area in which that topic falls.

Other general responsibilities for internal medicine faculty include reviewing the students' papers, conducting oral examinations at the end of each clerkship, and presenting and attending noon conferences and grand rounds.

The students' weekly schedule includes three different kinds of faculty rounds. As mentioned above, the primary attending physicians make bedside rounds three to five days per week. Such rounds give opportunities for the students to present and discuss patients and for the faculty to offer criticisms and suggestions as the student's work is reviewed. "Professor Rounds" are conducted two days per week; they consist of a formal patient presentation by a student and demonstration of the findings, followed by a group discussion. The responsibility for conducting these rounds is rotated among a few faculty members who are selected for their special aptitudes and abilities to support, stimulate, lead, and evaluate the students in this kind of setting.

Clinical pathology rounds are held once a week and are conducted jointly by a member of the full-time faculty of the Department of Medicine and a faculty pathologist, assigned by the UKSM-Wichita Department of Pathology. Usually one or two patients are presented by the students, followed by a conference to review clinicopathological correlations. Pertinent biopsy specimens and microscopic slides are utilized when these are available.

All students taking the junior medicine clerkship meet at the medical school three times per week. Two of these meetings are for the didactic-tutorials cited above. The third meeting is with the full-time faculty member who coordinates the clerkship and the chairman. During this meeting one student presents a patient and the group constructs a problem list and differential diagnosis, then discusses the approach to the patient's problem. An effort is made to present patients with common complaints, *e.g.* anorexia, shortness of breath, at these meetings.

Each student is required to write six critical case summaries during the 12 weeks. In each of these, patient data available at the time of writing is summarized, reviewed, and thoroughly analyzed; in conclusion the student defends the major diagnosis proposed. These papers are reviewed and critiqued by the attending physician and the resident responsible for the patient, as well as an independent outside faculty reviewer, *i.e.* a physician not involved in evaluating or caring for the patient.

Each hospital has a separate schedule of educational conferences in internal medicine; 12 to 15 of them occur weekly throughout the city. Most of the students attend these conferences which are directed especially to the primary care internist or the resident in internal medicine. The students are expected to attend one of the grand rounds presentations each week, held regularly in each of the four hospitals; these are scholarly presentations about a particular patient's problems by a faculty member or a visiting professor.

Evaluation Methods

The students' progress is discussed and reviewed in detail in faculty meetings every two weeks. Written evaluations by attending physicians, residents, and faculty members making professor rounds are submitted at the end of each six-week period. The students are evaluated in the areas of history taking and physical examinations, synthesis of observations and chart performance, diagnostic and management approach, interpersonal relationships, and other attributes including judgment and ability to handle responsibilities. The written examination covers the material presented in the didactic-tutorials. The topics for the oral examinations are taken from a list of eight topics chosen by the student, at least four of which are derived from the critical case summaries.

In keeping with the department's clinical emphasis, the students' grades are determined as follows:

Category	Points
Clinical and interpersonal skills	500
Critical case summaries	200
Written examination	200
Oral examination	100
TOTAL POSSIBLE	1,000

If the overall point score is 895 or greater, the evaluation is *Superior*; 700-894 points is *Satisfactory*; less than 700 points is *Unsatisfactory*.

Results

In the past four years, 114 medical students have completed the basic internal medicine clerkship at UKSM-Wichita; 25 students have received *Superior* and 89 earned *Satisfactory* evaluations for their performances in the basic clerkship in internal medicine. No *Unsatisfactory* grades were given, although additional rotations in the Department were recommended for a few students. The percentage of *Superior* marks declined from 36 per cent in 1974-75 to 14 per cent in 1976-77. It is possible that the

earlier groups were less representative of the entire student body than succeeding groups; perhaps a more likely explanation lies within the comprehensive grading system, which became better standardized and more generally accepted by 1976. The grades of the classes of 1975-78 are shown in Table I.

It is now the policy of UKSM that all students on both campuses must pass Part II of the National Board Examinations. The class of 1975 was required to take the examination but not to pass it; therefore these students took the examination as non-candidates. The classes of 1976-78 were required to pass the examination and registered for it as candidates. Except for the first year, the mean for the Wichita students was slightly below the national mean and that of the Kansas City campus; however, in each instance differences were not statistically significant. It is interesting to note that approximately one-fourth of our students took the examination before completing the internal medicine clerkship.

Since 1975, 112 students have graduated from UKSM following completion of clinical rotations on this campus. Twenty-five of them entered internal medicine residencies: one has finished residency training and is now in practice; one left the internal medicine residency and is now a resident in ophthalmology; and the remaining 23 are still in training in internal medicine at the time of this writing.

Discussion

An internal medicine clerkship for junior students in a community medical school can offer substantial advantages differing from those found in a more traditional setting. The emphasis of this clerkship is patient-oriented and centered on general internal medicine; in fact every student spends at least six of the 12 weeks on such services. Even on services with

TABLE I
THE BASIC CLERKSHIP IN INTERNAL MEDICINE:
RESULTS OF STUDENT PERFORMANCES

Year of Graduation	1975	1976	1977	1978
Number of Students	14	28	29	43
Number of Superiors	5(36%)	10(36%)	4(14%)	6(14%)
Number of Satisfactories	9(64%)	18(64%)	25(86%)	37(86%)
Number of Unsatisfactories	0	0	0	0

strong subspecialty orientations, efforts are made to provide the student with a broad spectrum of patients. Working with community physicians, students are involved in the care of patients who are clearly representative of the population in this region. Most patients have common problems that are seen by internists while many others are referred to our faculty in the tertiary care centers in this city because of esoteric or complicated conditions. All students have the opportunity to observe their faculty accept the risks, challenges, and rewards of caring for their own patients on a daily basis.

At this time, there is relatively little bench research ongoing in the community; therefore the students have limited opportunities to participate in or observe such projects. On the other hand, only one or two students at a time are assigned to a single faculty member, the primary attending physician; thus more individual attention is given to each student.

There are fewer library resources in Wichita than in a large well-established traditional academic medical center, although most published information can be obtained by inter-library loan after a modest delay. Computer terminals have been installed at the school and in all of the community hospitals; these provide access to various educational and self-study programs, such as those from Massachusetts General Hospital and Ohio State University. Moreover, numerous filmstrips and slides are available to supplement the various teaching activities.

Because the clerkship is citywide, faculty, students, and residents must do a certain amount of driving between the various hospitals and the school. A system of closed-circuit television is presently being installed to link the various educational activities occurring at the school and the hospitals; this may reduce travel time but will not eliminate it entirely.

Generally, the medical school has been well accepted by the community, although there was considerable publicity during 1978 emphasizing internal changes within the University and some differences between the two campuses of the School of Medicine. The erstwhile ambiguous relationship of UKSM-W with Wichita State University resulted in some confusion regarding the role of this clinical campus in the state university system.

Acceptance of the department's role in the multiple facets of internal medicine education by community internists and hospitals has been essential for the success of this clerkship; this can be ascertained readily from a review of the description above. Because of the citywide nature of the activities of the

Department, an early administrative obligation was to integrate the various hospital components and resident and student education. This integration is ongoing, but has been largely accomplished with much effort and great interest and cooperation. Substantial benefits have resulted, not only for students and residents, but also for the faculty who teach and practice at each institution.

Although some practicing internists did not believe they had time to teach medical students, their participation has made possible the successful operation of the clerkship. They provide the patients for the students as well as the majority of the teaching. Because of the vital and demanding faculty role of the primary attending physicians some problems have occurred; they have been dealt with by careful and individual attention creating increased flexibility for students and faculty.

There are differences among the volunteer faculty in terms of the number and kinds of patients and the amount of time spent teaching; thus, students enrolled in this clerkship may have somewhat variable experiences. However, the clerkship is more predictable now than it was initially, due to determined efforts by the primary attending physicians to provide each student with three new patients per week, the development of three additional general internal medicine services staffed by members of the full-time faculty (thereby providing at least six weeks of general internal medicine for every student), and by the establishment of professor rounds, which provide group bedside teaching and opportunities for all students to present patients.

How much can the medical school legitimately expect of volunteer faculty? They have the additional responsibilities of private practice and resident education, and commitments to medical societies, hospital committees, and other groups. Even those private physicians with unswerving dedication to medical student education can give only a limited amount of time. In an effort to maintain physician effort and reduce faculty fatigue, we have attempted to rotate some of the important responsibilities for teaching the students; this has been a bit difficult because of the gradual increase in class size. Yet it is neither feasible nor desirable for all teaching to be done by full-time faculty; therefore we continue to seek ways to involve the community physicians without overburdening them. Successful education for junior students is dependent on the cooperation of physicians, hospitals, and the School of Medicine. To this point, we believe the needed and expected cooperation, participation, and goodwill have been amply provided.

Further modifications in the clerkship will be made as full-time and volunteer faculty, residents, hospitals, and patients gain additional experience in this milieu, and as our students' performances in residencies and practice are observed and reviewed. The UKSM-Wichita Department of Internal Medicine is a pioneer in education; at the time of this writing, perhaps there are only nine such departments in the country, each with considerable variation in resources and responsibilities. The various segments of the medical community have worked together to create a different kind of education for which there was no tradition and very few working models. The experience of the past five years in Wichita has demonstrated that with considerable effort and tremendous cooperation, quality internal medicine education for significant numbers of medical students can be provided in a community setting.

Summary

UKSM-Wichita was established in 1972 to increase the number of medical school graduates in Kansas. The class size has increased from 14 in 1974 to 50 in 1978. The internal medicine clerkship has been developed using a small core of full-time and part-time faculty and a large number of volunteer faculty. The students are divided among three large private hospitals and one Veterans Administration Hospital; there is no "university hospital" as such. The full-time, part-time, and volunteer faculty share the responsibilities of providing teaching rounds, lectures and conferences, and of evaluating the students at the bedside and in written and oral examinations. Utilization of residents in Internal Medicine is essential in the day-to-day operation of this clerkship.

The internal medicine clerkship for junior students at UKSM-Wichita is patient-oriented and centered on general internal medicine; the students see patients with common as well as esoteric conditions. On the other hand, the library resources are not as comprehensive as those of a major academic center, and the opportunities for bench research are limited.

Community medical schools are relatively new and uncommon; the experience of the past five years in Wichita demonstrates that with the cooperation of local and regional physicians and hospitals, quality education for medical students can be provided in a community setting.

The Myelomeningocele Patient

(Continued from page 408)

the family, and finding a vocation allowing for independence. In the myelodysplastic adolescent a protocol of prevention, increasing personal capabilities, and environmental modification (PIE) must be applied in the interdisciplinary approach to care. The first phase is prevention of secondary complications such as contractures, obesity, scoliosis, psychosomatic complaints, and personality disorders. The second phase involves setting specific, realistic, and attainable goals based on individual assessment. Finally, environmental modification should be done cautiously to avoid overprotection and isolation.

Vocational rehabilitation is a part of the high school system with a heavy emphasis on the mentally retarded child. More emphasis must be placed on vocationally preparing the physically handicapped child.

Prenatal Detection

Prenatal screening for a variety of birth defects is now possible — including detection for neural tube defects. Amniocentesis and the measurement of alpha-fetoprotein levels is one mechanism. Serum screening for alpha-fetoprotein levels is in the research stage in this country. In the United Kingdom, this has been instituted widely on a voluntary basis.

With detection, abortion is an option for the family. However, the ethics of antenatal diagnosis and selective abortion, logistic difficulties of screening at the appropriate gestational age, risks of amniocentesis, financial costs and savings, and the benefits to families and society are all factors to be weighed in developing a screening program.

Summary

Providing adequate — much less ideal — care for patients with this birth defect is extremely complex. Maintaining a focus of optimal individual patient and family adaptation and function requires the expertise of many people and a level of cooperative effort that is attained only with great difficulty. We do not contend that our setting is yet at that level. However, believing in the multidisciplinary concept of management, we are learning and continuing to improve services.

We are optimistic that completion of the new clinical facility with its enlarged outpatient area will provide better facilities for this complex function.

A list of selected readings is available from the authors.

Buy U.S. Savings Bonds

Rebound Nystagmus

An Adult with Dandy-Walker Syndrome

TERRY A. COX, M.D., *Kansas City, Kansas*

REBOUND NYSTAGMUS is a disorder of eye movements caused most often by lesions affecting the cerebellum or cerebellar peduncles. Most patients with this sign have acquired disease of the central nervous system with other signs of neurological — particularly cerebellar — dysfunction. This report describes an apparently healthy adult found to have rebound and upbeat nystagmus during a routine eye examination. The CT scan revealed Dandy-Walker syndrome and agenesis of the corpus callosum. Rebound nystagmus has not previously been associated with this congenital malformation. The presence of isolated rebound nystagmus can be an indication of a major abnormality of the nervous system.

Case Report

A 27-year-old male experienced episodes of blurred vision when doing close work. He had no diplopia. In 1976 an optometrist had prescribed corrective lenses containing bifocal segments and a 2.5 diopter base-up prism on the left. The symptoms were relieved for a few months, but the blurred vision had recurred during an eight-month period.

The patient had experienced episodes of bifrontal headache for several years. The headaches became more frequent and severe, although they continued to be relieved by acetaminophen.

The visual acuity was 6/7.5 in both eyes with correction. Examination of ocular motility revealed a right hypertropia measuring four diopters in all gaze positions with distant fixation. A mild convergence insufficiency was detected.

Small-amplitude, upbeat nystagmus was present in the primary position. This nystagmus increased slightly on gaze up and increased even more on gaze down.

On gaze right the patient exhibited coarse, right-jerk nystagmus, which disappeared after 15 seconds of sustained right gaze. With return of gaze to the

primary position a coarse, left-jerk nystagmus appeared; it fatigued after 30 seconds. On gaze left the patient again exhibited coarse, left-jerk nystagmus. It fatigued after 15 seconds and was replaced by a

An adult male with rebound and upbeat nystagmus showed no other signs of neurological disease. Radiographic evaluation revealed agenesis of the corpus callosum and a Dandy-Walker malformation. This mode of presentation of the Dandy-Walker syndrome is unique. Rebound nystagmus can be the only sign of important central nervous system lesions.

small-amplitude, right-jerk nystagmus on sustained left gaze. On return to the primary position this right-jerk nystagmus became more marked, but fatigued after 30 seconds. Thus the patient had right-beating, left-beating, or no horizontal nystagmus in the primary position, depending on the direction of previous horizontal gaze.

Results of the rest of the ocular and neurological examinations were normal. Electronystagmography was performed. The caloric responses were enhanced, and the optokinetic responses were disorganized. An electroencephalogram yielded normal results.

Roentgenograms of the skull (*Figure 1*) revealed elevation of the internal occipital protuberance, the bony landmark of the confluence of the sinuses. CT scan (*Figures 2 and 3*) showed absence of the corpus callosum;¹⁻³ there were wide separation of the medial walls of the lateral ventricles, dilation of the occipital horns of the lateral ventricles, and dilation and dorsal extension of the third ventricle. The anterior horns and bodies of the lateral ventricles were normal. Also, the CT scan revealed agenesis of the cerebellar vermis, small cerebellar hemispheres, and a dilated fourth ventricle which appeared to communicate with a large posterior fossa cyst. A lumbar cisternogram was performed with ¹⁶⁹Yb-DTPA. The flow of cerebrospinal fluid was unimpaired, and isotope entered the cyst. This study implied communication

From the Department of Ophthalmology, University of Kansas School of Medicine-Kansas City.

Address reprint requests to Dr. Cox, Dept. of Ophthalmology, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.



Figure 1. Lateral roentgenogram of the skull. The arrow points to the internal occipital protuberance.

between the cyst and the normal cerebrospinal fluid pathways.

No surgery was performed.

Comment

Rebound nystagmus was first described by Hood *et al.*⁴ in 1973. The characteristics of the rebound phenomenon were those seen in this patient: (1) gaze-evoked horizontal nystagmus which fatigued and occasionally changed direction with sustained gaze deviation; and (2) nystagmus transiently beating in the opposite direction when gaze was returned to primary position. Hood's patients had other signs of cerebellar disease, as well as enhanced caloric responses, deranged optokinetic and following

movements, and complaints of unsteadiness without true vertigo. Occasionally the rebound movements were unilateral.

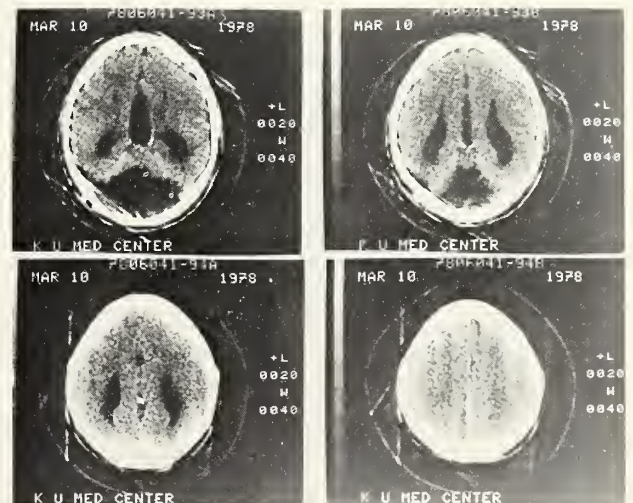
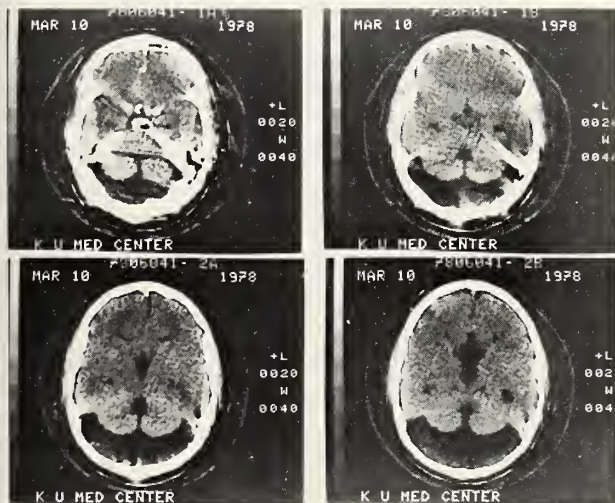
Of 60 patients with rebound nystagmus reported in the literature, 59 have had clinical or autopsy evidence of disease involving the cerebellum or cerebellar peduncles.⁴⁻¹⁰ The exception is a patient with Parkinson's disease who exhibited unilateral rebound.⁹ Rebound nystagmus has been associated with cerebellar atrophy and degeneration, multiple sclerosis, vascular disease, tumors, drug intoxications, familial spino-cerebellar degeneration, and trauma. One patient with brain-stem glioma experienced rebound nystagmus as the first sign of the disease. Previous reports of rebound nystagmus contain discussions of the possible mechanisms involved.^{4, 7}

In addition to rebound nystagmus, the patient described has upbeat nystagmus. Small-amplitude, upbeat nystagmus in the primary position has previously been associated with intrinsic medullary lesions.^{11, 12}

The vertical tropia in this case may be skew deviation, although the apparent progression of the tropia would be unusual in skew.¹³ Skew is usually seen in acute lesions, but it has been reported in slowly progressive lesions (Case 11 of Smith *et al.*¹⁴).

This patient has asymptomatic agenesis of the corpus callosum, an entity that has occasionally been an incidental finding during pneumo-encephalography and at autopsy.¹⁵ The present example is the first reported case of asymptomatic agenesis found with CT scan.

The Dandy-Walker syndrome is manifested by: (1) hydrocephalus; (2) defective development of the



Figures 2 and 3. CT scan, demonstrating agnesia of the corpus callosum and agnesia of the cerebellar vermis with a posterior fossa cyst.

vermis of the cerebellum; (3) cystic enlargement of the fourth ventricle; (4) enlargement of the posterior fossa; (5) elevation of the transverse sinuses, the confluence of the sinuses, and the tentorium; and (6) obstruction of the foramina of Luschka and Magendie.¹⁶ According to Hart *et al.*,¹⁷ the first three features define the syndrome. The other features are variable. Adult onset of the Dandy-Walker syndrome is rare; this topic has recently been reviewed.¹⁸

This patient has some, but not all, of the features of the Dandy-Walker syndrome. He has defective development of the cerebellar vermis, an enlarged posterior fossa, and elevation of the confluence of the sinuses, but lacks hydrocephalus. The cisternogram is evidence that he lacks obstruction of the foramina of the fourth ventricle as well. The radiographs in this case are not sufficient to distinguish between Dandy-Walker syndrome and isolated agenesis of the cerebellar vermis with an enlarged cisterna magna. A posterior fossa extra-axial cyst would also be a possible diagnosis. However, extra-axial cysts have a characteristic appearance on CT scan: the fourth ventricle is separate from the cyst, and the cerebellum is either normally developed and deformed by the cyst or focally atrophied adjacent to the cyst.² Such cysts between the cerebellar hemispheres are spherical.¹⁹

The posterior fossa cyst in this case is either a cystic fourth ventricle or a large cisterna magna. Evidence that this malformation is a Dandy-Walker cyst is the nystagmus. The presence of rebound nystagmus implies a chronic, perhaps slowly progressive, lesion. Although an associated degenerative disease of the brain stem may be causative, increased pressure in a dilated, cystic fourth ventricle seems more likely.

Acknowledgments

Drs. K. D. Davidson and J. Amini assisted with the radiographs.

References

1. Rothner, A. D.; Duchesneau, P. M. and Weinstein, M.: Agenesis of the corpus callosum revealed by computerized tomography. *Dev. Med. Child Neurol.* 18:160-166, 1976.
2. Kendall, B. E. and Kingsley, D.: The value of computerized axial tomography (CAT) in cranio-cerebral malformations. *Br. J. Radiol.* 51:171-190, 1978.
3. Harwood-Nash, D. C.: Congenital craniocerebral abnormalities and computed tomography. *Semin. Roentgenol.* 12:39-51, 1977.
4. Hood, J. D.; Kay, A. and Leech, J.: Rebound nystagmus. *Brain* 96:507-526, 1973.
5. Baloh, R. W.; Konrad, H. R. and Honrubia, V.: Vestibulo-ocular function in patients with cerebellar atrophy. *Neurology* 25:160-168, 1975.
6. Baloh, R. W.; Honrubia, V. and Konrad, H. R.: Periodic alternating nystagmus. *Brain* 99:11-26, 1976.
7. Zee, D. S. *et al.*: Ocular motor abnormalities in hereditary cerebellar ataxia. *Brain* 99:207-234, 1976.
8. Solingen, L. D. *et al.*: Subclinical eye movement disorders in patients with multiple sclerosis. *Neurology* 27:614-619, 1977.
9. Morales-Garcia, C. *et al.*: Clinical significance of rebound nystagmus in neuro-otological diagnosis. *Ann. Otol. Rhinol. Laryngol.* 87:238-242, 1978.
10. Sogg, R. L. and Tharp, B. R.: Cherry-red spot-myoclonus syndrome. Paper presented at the American Academy of Ophthalmology, October 24, 1978.
11. Daroff, R. B. and Troost, B. T.: Upbeat nystagmus. *JAMA* 225:312, 1973.
12. Schatz, N. J.; Schlezinger, N. S. and Berry, R. G.: Vertical upbeat nystagmus on downward gaze. *Neurology* 25:380, 1975.
13. Keane, J. R.: Ocular skew deviation. *Arch. Neurol.* 32:185-190, 1975.
14. Smith, J. L.; David, N. J. and Klintworth, G.: Skew deviation. *Neurology* 14:96-105, 1964.
15. Slager, U. T.; Kelly, A. B. and Wagner, J. A.: Congenital absence of the corpus callosum. *N. Engl. J. Med.* 256:1171-1176, 1957.
16. Brown, J. R.: The Dandy-Walker syndrome. *Handbook of Clinical Neurology.* (Vinken, P. J., and Bruyn, G. W. eds.). Amsterdam, North Holland Publishing Co., vol. 30, part 1, ch. 24, pp. 623-646, 1977.
17. Hart, M. N.; Malamud, N. and Ellis, W. G.: The Dandy-Walker syndrome. *Neurology* 22:771-780, 1972.
18. Lipton, H. L.; Preziosi, T. J. and Moses, H.: Adult onset of the Dandy-Walker syndrome. *Arch. Neurol.* 35:672-674, 1978.
19. Banna, M.: Arachnoid cysts on computed tomography. *Am. J. Roentgenol.* 127:979-982, 1976.

Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

RNA Tumor Viruses

A Key to Cancerous Conversion

HENRY STONE, Ph.D.,* *University of Kansas*

RNA TUMOR VIRUSES provide an ideal model system for studying the biochemical events that lead to a cancerous conversion. As the fundamental genome size of RNA tumor viruses is fairly small (about 3×10^6 daltons, coding capacity for 300 amino acids), it is quite probable that experiments with these viruses can help to determine the mechanisms by which a virus-specific protein can cause transformation of a cell. This, in turn, should lead to an understanding of the processes that control normal cells.

RNA tumor viruses have been found to cause cancer in a variety of non-human primates. The viruses that have been studied most occur in the chicken (Rous sarcoma virus) and the mouse (Rascher leukemia virus and the mouse mammary tumor virus). In general, results obtained from one RNA tumor virus are interchangeable with those from all RNA tumor viruses. At this time, no isolates of a human- or dog-specific RNA tumor virus have been detected. However, as the involvement of RNA tumor viruses have been proven in the etiology of cancer in a variety of systems, including those of mice, cats and birds, it would appear that isolation of

a human-specific tumor virus is still a possibility.

Infection of cells with RNA tumor viruses involves a specific attachment of infectious particles to the surface of a susceptible host cell, penetration of the outer cell membrane, and release of the viral RNA genome into the cytoplasm of the cell. The RNA genome is transcribed into a complementary DNA strand by the viral-specific enzyme (the reverse transcriptase), and the single-stranded DNA transcript becomes enzymatically converted into a circular, double-stranded DNA molecule called a "provirus." The provirus then integrates into the host chromosomal DNA, and the integrated proviral DNA is transcribed into an RNA molecule which serves as messenger RNA to direct the synthesis of viral proteins.

As infection progresses, some of the viral proteins combine with newly made viral RNA molecules to form "cores" (the internal structure of the virus particle). These cores move to the cell surface where they become coated with sections of the outer cell membrane into which the viral-specific membrane proteins have become inserted. Newly made RNA tumor viruses are then released from the cell surface by a budding process.

(Continued on page 430)

* Dr. Stone is affiliated with the Mid-America Cancer Center program at the University of Kansas-Kansas City.

ONCOGENIC VIRUSES			
Group	Examples	Effect on Animals	Effect on Cells in vitro
RNA Tumor ¹	Rous Sarcoma (chicken) feline leukemia (cat) mouse mammary tumor (mouse)	Sarcomas, leukemias in chickens, cats, mice, mammary tumors in mice	Transforms cells of their natural host ²
Papova	Polyoma (mouse) SV 40 (monkey)	Multiple tumors in hamsters or guinea pigs	Transforms mouse and hamster cells, SV 40 transforms human cells
Adeno	Adeno (human)	Tumors in hamsters	Transforms hamster, rat cells; some viruses transform human cells
Herpes	EB (Epstein-Barr) (human)	Mononucleosis; suspected of causing Burkitt's lymphoma and nasopharyngeal carcinoma	—?—
	Herpes Simplex, type 2	Suspected of causing cervical carcinoma	—?—

¹ Causes tumor in a natural host.
² Transformed cells are those converted to their cancerous equivalent.

Case Reports

POSSIBLE MILD REACTION TO ERYTHROMYCIN ETHYL SUCCINATE

A 12½-year-old male, weighing approximately 45 kg (100 lbs), had been receiving hyposensitization for asthma and bronchitis for an extended period of time. He also was given combined medication for asthma with no known allergic reaction.

In April 1978, he developed asthma and bronchitis for which he was given erythromycin ethyl succinate (EES), 400 mg four times/day with bronchodilator medication as needed. One and a half days later he developed sudden severe abdominal pain and was admitted to the hospital. The pain subsided somewhat but seemed to be gastrointestinal in nature, and was rather diffuse over the abdomen, with tenderness primarily in the lower-left quadrant. The upper abdominal quadrants seemed normal.

Results of blood count and urinalysis were normal. Chem-10 testing indicated elevated SGOT and slightly elevated SLDH; total bilirubin and alkaline phosphatase did not appear to be significantly involved.

Repeat testing three days later revealed a further elevation in both SLDH and SGOT, as well as an increase in SGPT. A slight increase in alkaline phosphatase was not believed to be significant for a male of his age.

Because hepatotoxic reaction to EES had rarely if ever, been reported, further tests were conducted. Serum amylase testing, chest x-ray, EKG, repeated blood counts, and urinalysis revealed nothing of significance. He returned home three days following the original attack. His condition was continually monitored by periodic repetition of laboratory tests, which showed a return to normal results, and the child remained in apparent good health.

Approximately three and one-half months after the original episode, the patient again developed cough, bronchitis and rales in the chest, but without wheeze. He was not given bronchodilator or asthma medication but was treated with antibiotics due to problems with recurrent infection; because of the questionable status of his tolerance of EES, oral penicillin was administered for a few days. The patient did not respond to the treatment; his cough and rales persisted. Because of the marked allergies, it seemed unwise to continue the penicillin regimen. Inasmuch as EES has rarely caused a reaction and there was no

real evidence to specifically link it with hepatotoxicity during the first episode and because of the possibility that other medications might be involved, it was decided to again administer EES. The patient was first hospitalized and tested; SLDH and SGOT were at normal levels. Small, gradually increasing doses of EES were then administered for 24 hours, at which time the dosage had been increased to 400 mg four times/day. He subsequently experienced a second episode of severe abdominal pain with nausea and vomiting. When, after another dose of the medication the nausea persisted, EES regimen was discontinued. Blood counts and results of urinalysis were normal. Chem-10 testing of blood drawn immediately following the final dose again revealed elevated enzyme levels with a slight elevation in serum bilirubin. However, physical examination showed nothing significant with only a vague tenderness mostly in the lower-left quadrant of the abdomen. The patient improved rapidly, and tests the next morning showed a decline in levels of SLDH and SGOT, although SGPT was now elevated.

He was released to be observed at home. Repeat tests one week later yielded normal results except for slightly elevated SGPT.

The patient continued to do well, and his chest cleared. Results of blood counts and tests done during hospitalization for Australian antigens were found to be normal. Chem-10 testing performed 10-14 days later showed all levels within acceptable limits. His most recent examination showed no evidence of abnormalities other than his allergies; he remains under observation as the hyposensitization process is continued, but he appears to have completely recovered from the episodes reported. *Table I* compares the results of testing during the two episodes.

Summary

This case indicates two episodes of a probable mild and reversible hepatotoxic reaction to erythromycin ethyl succinate. Asthma medication was given before and during the first episode, somewhat confusing the problem. The asthma medication was not administered preceding and during the second episode but the patient was treated with a short course of oral penicillin prior to treatment with EES. The second episode closely paralleled the first except for a slight increase in serum bilirubin. The patient appears to have completely recovered.

James H. Bena, M.D., 109 E. Ninth Street, Pittsburg, KS 66762.

TABLE I

Test	1st Episode					2nd Episode					Normals
	4/26	4/28	5/1	5/8	7/26	8/13	8/16	8/17	8/21	9/5	
Glucose	93						117				65-110 mgs%
Urea Nit.	8						12				10-20 mgs%
Total Protein	6.9						6.9				6-8 gms%
Uric acid	5.8						6.9				2.5-8.0 mg%
SLDH	251	334	173	173	97	127	346	177	204	170	124-256 mu/ml
SGOT	173	308	36	26	27	28	307	281	29	24	24-61 mu/ml
Calcium	5.2						4.8				4.5-5.5
Alk. Phos.	368	411	410	362	411		410		335	409	50-331 mu/mo
Cholesterol	226						210				115-247 mg%
Amylase		75									60-160 units
Bilirubin	0.5		0.4	0.3	0.6		1.2		0.3	0.8	mgs% 0.15-1.0; 0.0-1.6 ?
SGPT		170	126	32	14			175	96	9	0-35 units

HYPOPHOSPHATEMIA ASSOCIATED COMA FOLLOWING TREATMENT OF DIABETIC COMA

Hypophosphatemia is a well-recognized consequence of diabetic ketoacidosis (DKA), especially following insulin therapy.¹ In a recent review article, Kreisberg suggested that phosphorus supplementation during the treatment of DKA is easy and may be of theoretic benefit.² This report describes a case of hypophosphatemia associated with coma following treatment of DKA and the beneficial effects of phosphate therapy.

A 72-year-old black male was admitted with general weakness, vomiting, and confusion. The patient had not been on any medication, and related no significant past medical history. A friend reported that the patient had experienced a craving for water and frequent urination during the week prior to admission.

On admission the patient was lethargic and markedly dehydrated. The vital signs were blood pressure, 96/80; temperature, 36.5 C; pulse, 106/min; and respirations, 30/min. There were no lateralizing neurologic signs, and examination of the chest, heart, and abdomen revealed no abnormalities. Initial laboratory testing revealed: serum glucose, 1155 mg/dl; sodium, 120 mEq/l; potassium, 2.0 mEq/l; chloride, 62 mEq/l; carbon dioxide, 4 mEq/l; inorganic phosphate, 8.7 mg/dl; BUN, 46 mg/dl; creatinine, 2.6 mg/dl; arterial blood gasses, pH 7.15, pO₂ 146, pCO₂ 9.5; and actual bicarbonate, 3.0 mEq/l. Treatment was begun with intravenous (IV) normal saline solution with potassium chloride added, hourly intramuscular crystalline insulin, 10-15 units after a priming dose of 20 units IV, and an ampule of Na₂HCO₃. Twelve hours later the patient's general condition improved and he was much more alert. Serum glucose was 390 mg/dl; potassium, 3.5 mEq/l; sodium, 136 mEq/l; chlorine, 91 mEq/l; and carbon dioxide, 14.2 mEq/l. Intravenous fluid and insulin dosages were modified accordingly. Eight hours later he became comatose. Following a thorough physical and electroencephalographic examination, the neurology consultant suggested there was no organic cause of coma. Serum glucose measured 375 mg/dl; inorganic phosphate, 0.4 mg/dl. A solution of KH₂PO₄•K₂HPO₄ was added to the IV fluid, and the coma lightened after several hours of phosphate infusion. The patient was fully conscious the next day. Serum phosphorus was 2.8 mg/dl, and was kept in normal range with oral supplements. The patient was later discharged from the hospital in good condition. His diabetes was well-controlled with 24 units of lente insulin daily.

The possible number of complications that could be ascribed to phosphorus deficiency are limited only by one's imagination.¹ Myopathy, seizures, and coma have been reported;³ profound hypophosphatemia has been described in association with alcoholic withdrawal, DKA, pharmacologic binding of phosphate by antacids, hyperalimentation, nutritional recovery syndrome, severe respiratory alkalosis, and diuretic or recovery phase following severe burns.¹

The effects of hypophosphatemia on the central nervous system have been attributed to a direct decrease in brain cell adenosine triphosphate.⁴ Another explanation implicates a phosphorus deficiency-related depletion of erythrocyte 2,3-diphosphoglycerate (2,3-DPG).^{5, 6} The interaction of 2,3-DPG and oxyhemoglobin has been well documented. A low erythrocyte 2,3-DPG concentration is associated with a shift of the oxyhemoglobin dissociation curve to the left and consequently a decreased delivery of oxygen to tissues. This has been implicated as a cause of persistent diabetic coma.⁷ In addition to phosphorus deficiency, hyperglycemia and acidosis inhibit 2,3-DPG synthesis.⁸ During the treatment of DKA, restoration of 2,3-DPG concentrations takes up to 96 hours,⁶ especially if inorganic phosphorus is in short supply. Phosphorus

supplementation accelerates the process, and 2,3-DPG concentrations may reach normal levels within 12-14 hrs.⁹

In our patient, coma developed after ketoacidosis, hyperglycemia, and dehydration had been adequately treated. Acute, profound hypophosphatemia induced by insulin therapy is probably the major, if not the sole cause of coma. The patient fully recovered following inorganic phosphate infusion. We believe that phosphorus supplementation is essential in the treatment of DKA under most circumstances.

Nirandon Wongsurawat, M.D. and Vaneer Wongsurawat, M.D., Veterans Administration Medical Center, Topeka, KS 66622.

References may be obtained from the authors.

MALIGNANT TERATOMA IN UNDESCENDED TESTICLE

Testicular tumors are rare. Only 2 per cent of the cancers in males occur in the testis and nearly 60 per cent of these are found in men 25-44 years of age. Testicular tumors are the most common malignancy in men aged 29-35 years, and they constitute the fourth most common genito-urinary tumor. The incidence of testicular tumors in the United States is about 2:100,000 males.¹ The incidence of malignancy in an undescended testicle has been reported to be higher than in a normal testicle. In United States Army selectees, 2,000 testicular tumors were found, and 72 cases occurred in undescended testes, an incidence of 3.6 per cent.

In a small rural hospital, the following case was documented of malignant teratoma arising from an undescended testicle. Seminoma is said to be the most common form of malignancy arising from an undescended testicle,² but in this case malignant teratoma with choriocarcinomatous elements was found.

Case Report

A 29-year-old male, known to be mentally retarded, was brought to the office because of swelling in the right groin. The patient was complaining of occasional discomfort in the swelling. On examination, the swelling was found to be firm, slightly tender, and not movable; it measured 10 x 8 cm. A small cyst measuring about 2 cm was felt in the right side of the scrotum. Preoperatively this was thought to be the right testicle. Under general anesthesia, the mass in the right groin was excised. The cyst in the right side of the scrotum was found to be an epididymoid cyst coming from the left testicle; no testicle was found on the right side. The specimen measured 9 x 8 x 4 cm, and microscopic examination revealed this to be a malignant teratoma with some choriocarcinomatous elements.

Alpha-fetoprotein (AFP) testing was carried out and found to be negative, but serum HCG was elevated at 6.6 mIU/ml (normal under 3.0). Intravenous pyelogram was negative; tomograms of the chest revealed no evidence of metastasis in the lungs. The case was discussed with a urologist as well as a chemotherapist, and bilateral retroperitoneal lymph node dissection was subsequently performed. There was no evidence of metastatic tumor in the lymph nodes from retroperitoneal and common iliac areas.

At the suggestion of the chemotherapist, the patient was started on chemotherapy followed by radiation treatment, and the repeat serum HCG test was negative. The chemotherapy as recommended by the Southwest oncology group consisted of vinblastine and bleomycin followed by radiation.

Undescended Testis

Scorer reported that there is a 21-per cent incidence of undescended testis in premature newborn infants, 2.7 per cent in fullterm newborn infants, and 0.2 per cent at the age of one year.³ The data of Scorer and Farrington show that spontaneous descent of the testis rarely occurs after the age of one year. The unilateral undescended testis is 3-5 times more common than bilateral undescended testis. In most series, the right side is more frequently involved than the left. A unilateral absent testis occurs in up to 3 per cent of patients.⁴

Discussion

The incidence of malignancy in an undescended testicle varies from 3.0-6.5 per cent. In one series of 1,865 cases, 120 were found to be associated with undescended testicle, an incidence of 6.5 per cent. From the Armed Forces Institute of Pathology, Dow and Mostofi reported 2,100 consecutive testicular tumors. Of these, 73 were listed as cryptorchids — an incidence of 3.5 per cent. In 14 cases, the patients had orchiopexy prior to the development of testicular tumors. There were six seminomas, three teratocarcinomas, one teratoma, two embryonal carcinomas, one teratoma with embryonal carcinoma, and one embryonal carcinoma with elements of choriocarcinoma. The authors suggest a high incidence of testicular malignancy among patients with cryptorchidism who have undergone orchiopexy after the age of six years; they advocate orchiopexy before the age of six and orchiectomy after the age of six.¹

Linke and Keifer found nine out of 45 testicular tumors arising in undescended testis.⁵ Patton and Mallis found 5.1 per cent of testicular tumors arising from cryptorchid testis.⁶ Gilbert and Hamilton, and Sauer and associates reported the frequency of testicular tumors in ectopic testis to be 48 times that of scrotal testis. Tumor in the abdominal testis is four times more frequent than the testis located in the inguinal region. Their studies suggest development of malignancy as one in eighty in inguinal testis and one in twenty in abdominal testis.²

According to various others, an inguinal testis has perhaps a 20 times increased chance of developing a malignant lesion; whereas an abdominal testis may have as high as 40 times increased chance of developing carcinoma.⁴

All types of germ cell tumors were reported from undescended testicle but seminoma was said to be the most common. The next most frequent tumor is teratocarcinoma, as with the case here reported. A giant intra-abdominal seminoma arising from undescended abdominal testis was reported by Rao and associates; the tumor weighed 1,550 grams and measured 25 x 20 x 15 cm.⁷ Choriocarcinoma from undescended testicle was reported by Mantoudis *et al.*⁸ Malignant germ cell tumor in situ in a cryptorchid testis was reported by Waxman.⁹ Gilbert and Hamilton, in a survey of 7,000 testicular malignancies, noted that carcinoma develops more frequently in ectopic testes and pseudohermaphrodites than in normal males.¹⁰ Bilateral testicular seminoma in intra-abdominal testes was reported by Baroudy.¹¹

Batata and his associates analyzed 45 cryptorchids with testicular tumor treated at Memorial Hospital between 1934 and 1973. Twenty-five patients had the cryptorchid state repaired at the ages of 4-27 years, and the tumors developed 4-47 years later. There were 18 pure seminomas, 17 embryonal carcinomas, nine teratocarcinomas and one reticulum cell carcinoma. They pointed out that carcinogenesis does not seem to be hastened in undescended or maldescended testes, suggesting that tumor development is independent of testes site per se. According to them, the point to be emphasized is that concern about the cryptorchid testis does not end following late descent or placement of the testicle in the scrotum. Proper management necessitates careful observation of these patients at regular intervals thereafter.¹²

Mostofi and Price listed the following four factors that may influence development of malignancy in an undescended testicle: (1) abnormal germ cells; (2) interference with the blood supply; (3) endocrine disturbances; and (4) gonadal dysgenesis. According to them, presence of paritubular fibrosis, hyalinisation, and thickened vessels suggests that long standing ischemia may play a role in the occurrence of testicular tumor, but no confirmatory evidence has yet been presented.²

Summary

A case of malignant teratoma arising from an undescended testicle was presented. Literature of the past ten years was reviewed regarding the incidence of malignancy in undescended testicle; this incidence is about 3-6 per cent.

Acknowledgements

S. S. Reddy, M.D., urologist; Dennis Moore, M.D., chemotherapist; and H. H. F. Winchell, M.D., radiotherapist, assisted in the management of this case.

P. J. Reddy, M.D., 304 Prout Street, Hill City, KS 67642.

References may be obtained from the author.

VITAMIN D DEFICIENCY RICKETS

Vitamin D supplementation of dairy products and the usual mild winter climate makes vitamin D deficient rickets a rarely-encountered condition in the Midwest. The following case of nutritional rickets was diagnosed at the University of Kansas School of Medicine (UKSM) in late winter of 1978.

Case Report

A 21-month-old black female presented in the pediatric emergency room at UKSM on 3-22-78 with a left sided focal seizure. The history revealed that the episode had begun 15 minutes prior to arrival. The convulsion stopped spontaneously shortly after the child arrived. She had been seen in the Pediatric Out-Patient Clinic at UKSM two days prior to this episode, and was treated with erythromycin and sulfisoxazole for an otitis media. She was afebrile at the time of the seizure. On physical examination, after cessation of the seizure, a resolving otitis media was present. There was no other indication of infection.



Figure 1. Photographs of patient's legs illustrating bowing.

Laboratory studies revealed calcium, 6.3 ng/dl ($N = 9.0-11.0$); and inorganic phosphorus, 3.5 ng/dl ($N = 3.0-5.0$). Other electrolytes were normal, and cerebrospinal fluid results were normal. Hemoglobin was 10.6 ng/100 ml. The patient was admitted for evaluation of the seizure and hypocalcemia.

Musculoskeletal examination revealed an open anterior fontanel, two teeth in each quadrant, prominent costochondral junctions, flaring of the wrists, and prominent "bowed" legs (Figure 1). No localizing signs were present on neurological examination. Chvostek's and Trousseau's signs were negative.

The patient's past history revealed an ABO incompatibility in the nursery without significant hemolysis or hyperbilirubinemia. Birth weight was 3283 gm; length, 49 cm; and head circumference, 34 cm. She had been followed in the Out-Patient Clinic for only episodic care since birth. Growth data indicated that both weight and linear growth followed the 50th percentile of the NCHS growth charts until one year of age at which time she began to fall away from the normal growth curve. When next seen at 20 months of age, her height was 78.4 cm (10th percentile) and weight was 10.2 kg (20th percentile). One month later, when admitted to the hospital, her height was 78.4 cm (5th percentile) and weight was 10.2 kg (5th percentile). Both the mother, age 24, and the father, age 31, were less than 5 feet tall; however, there were no other short family members. Aside from short stature, the parents showed no findings of rickets.

A dietary interview revealed that the child was breast fed without supplemental vitamin D until six months of age. At that time she was weaned to 2 per cent homogenized milk. She refused to drink more than 4 oz of milk daily, and intake of other dairy products was also small. Vitamin D intake was estimated to be 200-300 IU daily. She had little exposure to sunlight, probably due to the harsh winter experienced in the Midwest in 1978.

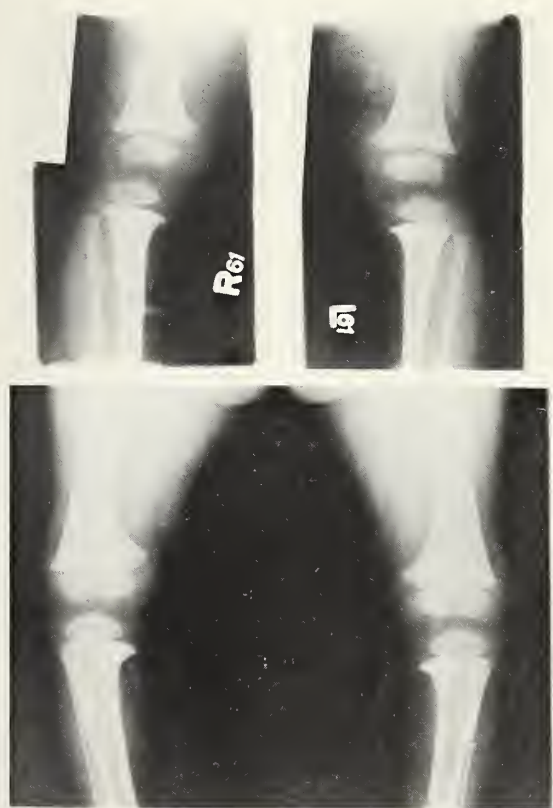


Figure 2. Radiographs of the femoral epiphyses before (above) and after (below) therapy with vitamin D.

The hospital course was uncomplicated, and the patient experienced no further seizures. Calcium ranged from 6.3-7.5 mg/dl, and was 6.4 on discharge; magnesium was 1.7 mEq/l. Inorganic phosphorus ranged from 3.5-4.9 mg/dl, being 4.5 on discharge. Alkaline phosphatase was elevated at 45.5 Bessey-Lowry U/L ($N = 5.9-13.9$). Serum iron was 42 μ g/dl, and the iron binding capacity was 345 μ g/dl, giving 12 per cent saturation. A 24-hour-urine test for creatinine clearance was 96 cc/min/1.73 m². Tubular reabsorption of phosphate was 91 per cent. Twenty-four hour urinary calcium excretion was normal, and folate, vitamin B₁₂, and ascorbic acid levels were all normal. Serum parathormone was 305 pg/ml ($N = 30-100$). Radiographic studies revealed the presence of a "rachitic rosary" at the costochondral junctions, splaying and cupping of all metaphyses, and diffusely poor mineralization (Figure 2).

The patient was discharged on a regimen of 1600 IU of cholecalciferol and calcium supplementation. Upon a return visit three weeks later, calcium level was 9.7 mg/dl.

Discussion

Because of the improved understanding of calcium and vitamin D metabolism and the fortification of milk products in the United States with vitamin D, deficiency rickets is now a rarely encountered entity. This same fact makes consideration of this entity less likely in the routine preventive management of healthy infants and children. The several reported cases have been from the northern states where lack of sunshine associated with long winters is apparently a causative factor.¹⁻³ The case presented clearly indicates that vitamin D deficiency rickets also exists in urban centers in the Midwest. Changing weather patterns may be responsible for the case of vitamin D deficient rickets appearing at an institution where no cases have been observed in the past ten years.

This child's history was typical in many respects. She grew normally until the age of 12 mos. at which time she began to walk. At that time both linear growth and weight fell from the growth curve. She was seen following a particularly long and sunless winter. She received no supplemental vitamin D (supplementation is not routinely provided at this University) either during the time of breast feeding or the following months. Her estimated vitamin D intake was below the recommended dietary allowance of 400 IU daily. Her serum calcium rapidly returned to normal with supplemental vitamin D in low pharmacological doses.

Vitamin D deficiency rickets does not, of course, go completely unrecognized in the United States. O'Connor¹ reported two cases, diagnosed in 1974 and 1975 at the University of Michigan, both being unsupplemented, breast fed infants in the northern climates. Castile, *et al.*² presented two cases — one from Minnesota who refused milk after having been breast fed for eight months, and one of a child from Kentucky who was removed from milk products for suspicion of milk allergy. Both of these children developed rickets, first evident on chest roentgenograms done for respiratory symptoms. Arnaud, *et al.*³ discuss nine cases, seven from Canada and two from the northern United States. These instances and the case presented here clearly indicate that vitamin D deficiency rickets is still a potential health problem in the U. S. today and may become more prevalent if current weather patterns persist. This case may indicate that a large number of children are borderline deficient and may require supplemental vitamin D during the winter months if nutritional evaluation suggests potential vitamin D deficiency.

Steven W. Crouch, M.D., and Wayne Moore, M.D., Ph.D.,
Section of Pediatric Endocrinology, UKSM-KC, 39th &
Rainbow Blvd., Kansas City, KS 66103.

References may be obtained from the authors.

BRONCHOGENIC CARCINOMA WITH CARDIAC METASTASIS

Metastatic cancer of the heart was first described by Boneti in 1700.¹ Metastatic tumor of the heart has been described in 1.5-20.6 per cent of patients dying of malignant tumors.² The most common tumors involving the heart include malignant melanoma, carcinoma of the lung, and carcinoma of the breast.^{2,3}

There have been several clinical and autopsy studies that include a large number of cases of malignant tumors with cardiac metastases.^{1,4-6} Electrocardiograms (ECG) showed negative, equivocal, or positive correlations. However, the size and extent of the cardiac involvement are not described in adequate detail in these large series of cases. Most of the ECG changes were nonspecific and were not of localizing value. However, Berge and Sievers⁷ noted 122 cases of cardiac metastasis. There was strong antemortem suspicion of metastases in six cases with macroscopical metastases.

Swirsky and associates⁸ reported a case of secondary heart tumor due to direct extension of bronchogenic carcinoma. ECG changes initially strongly suggested an acute high lateral wall injury, but the enzyme changes were absent and electrocardiogram remained unchanged for two weeks. The electrocardiographic localization in the case reported by these authors was due to the fact that the lateral wall of the left ventricle was involved.

This report concerns a case of a bronchogenic carcinoma with moderate sized metastatic heart tumor, involving the left ventricle and the interventricular septum. Initial ECG was essentially normal. An ECG taken 18 days prior to death was not of localizing value despite moderate size and location of the lesion.

Case Report

A 45-year-old white male was admitted to the hospital on December 14, 1977, with a history of severe backache of three months duration and a 70-pound weight loss during the 18 months prior to admission. He had a smoking history of 40 package years. Physical examination revealed a tall, emaciated, white male. There was impairment of percussion note over the left lower chest posteriorly. Significant initial laboratory studies included: BUN, 11.4 mg/dl; calcium, 9.8 mg/dl; phosphate, 3.5 mg/dl; alkaline phosphatase, 98 IU/l (normal range 36-92 IU/l); total serum protein, 6.1 gm/dl; and serum albumin, 3.5 gm/dl. Chest x-ray showed increased density in the left posterior basilar segment. Fiberoptic bronchoscopy and biopsy revealed the pulmonary lesion to be squamous cell carcinoma. Bone scan revealed increased tracer uptake at the 11th dorsal vertebra. CT scan of the abdomen showed two metastatic nodules in the liver and areas of decreased perfusion with irregular margins in both the kidneys consistent with avascular solid masses. ECG (Figure 1) dated December 14, 1977, was within normal limits.

The patient received radiation therapy (2,000 rads) to the lower dorsal and lumbar spine with relief of backache. During his hospital stay he developed hypercalcemia which was treated with normalization of serum calcium level. He was discharged on February 3, 1978.

He was readmitted to the hospital on March 3, 1978, and was noted to be drowsy and sleeping most of the time. Serum chemistry revealed the following pertinent results: calcium, 14 mg/dl; phosphate, 3.9 mg/dl; total serum protein, 4.5 gm/dl; serum albumin, 1.7 gm/dl; and alkaline phosphatase, 197 IU/l. ECG on March 3, 1978, (Figure 2) showed regular sinus rhythm and nonspecific ST segment and T wave changes. He was appropriately treated with lowering of serum calcium. His condition gradually deteriorated, and he died on March 21, 1978.

Autopsy revealed a moderately well-differentiated squamous cell carcinoma of the lower lobe of the left lung with widespread

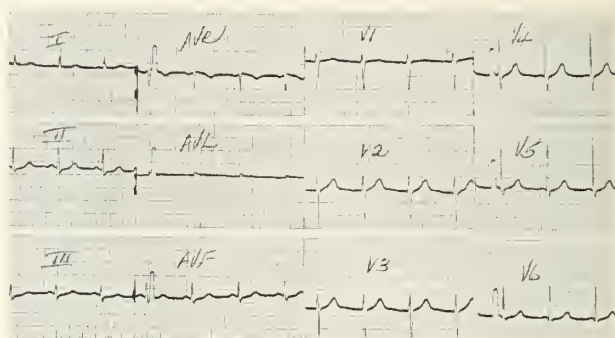


Figure 1. Electrocardiogram on his first admission to the hospital on December 14, 1977.

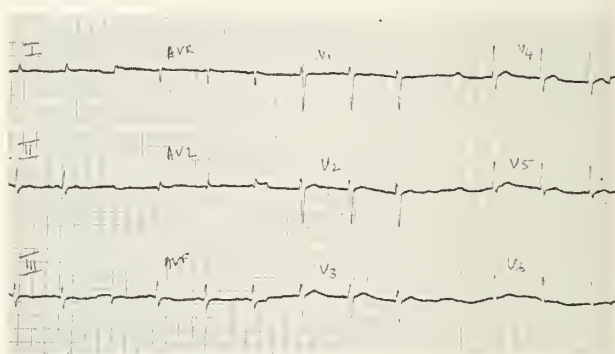


Figure 2. Electrocardiogram on the day of his last admission on March 3, 1978.

metastases to the liver, both kidneys, right adrenal gland, omentum, and the heart. The heart weighed 320 gm. There was a single metastatic lesion measuring 3.5 cm in diameter on the epicardial surface of the left ventricle near the apex. Serial sections of the heart revealed the metastatic lesion involving the entire thickness of the left ventricular wall and the interventricular septum (Figure 3).

Comments

Metastasis to the heart most often occurs without clinical evidence, but is always worthy of consideration in a patient with

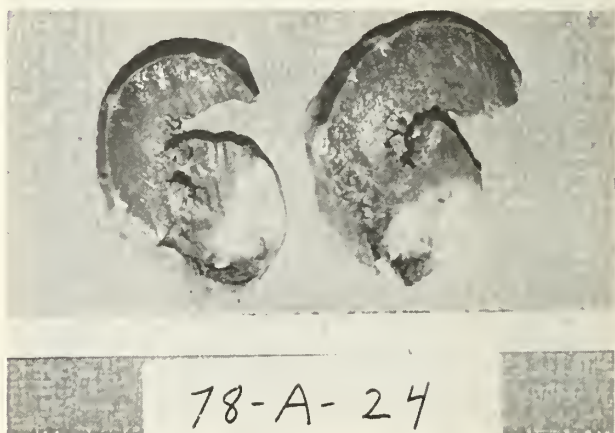


Figure 3. Sections of the heart showing metastatic lesion involving the left ventricular wall and the interventricular septum.

cancer who develops cardiovascular symptoms. Given time and tumor growth most patients will develop ECG changes. The old tracings are especially valuable for comparison.⁹ Associated electrolyte abnormality such as hypercalcemia may further add to changes in the ECG and probably interfere with localizing changes.

The patient described in this case report had bronchogenic carcinoma with widespread metastases. He had normocalcemia and a normal ECG on his first hospital admission, but on his second hospital admission he was found to have hypercalcemia and hypoalbuminemia. If correction is made for hypoalbuminemia his serum calcium would be equivalent to about 16 mg/dl. ECG changes on March 3, 1978, were consistent with hypercalcemia of that magnitude. The size and location of the lesion was such that it could have been reflected in the ECG.

The surprising finding was a moderate sized metastatic lesion without ECG abnormalities at the time of his first admission (approximately three months before his death) and nonspecific ECG changes at the time of his last admission. These changes are consistent with hypercalcemia. It is probable that the hypercalcemia in this patient masked localizing ECG abnormalities secondary to cardiac tumor. Therefore, in a patient with metastatic cancer who has hypercalcemia, ECG cannot be relied upon to exclude cardiac metastases.

K. G. Nagesh, M.D.; K. P. Poulouse, M.D.; G. Bhaskar, M.D.; Orlando Ventura, M.D.; and G. M. Rao, M.D., V.A. Medical Center, Leavenworth, KS 66048.

References may be obtained from the authors.

PERSISTENT SEVERE EOSINOPHILIA

The functions of the eosinophil granulocyte are not as well understood as those of the polymorphonuclear or basophil granulocytes. Consequently pathologic states associated with this cell are even less clear. The eosinophil has a role in the phenomenon of allergy and other diverse conditions, where the numbers of these cells in the circulation are increased, typically seen in drug reactions, parasitic infestations, Hodgkin's disease and other malignancies, and some forms of vasculitides.^{1, 2} The hypereosinophilic syndrome (HES) is a pathologic state associated with a very great increase in eosinophilic leukocytes with massive tissue infiltration by these cells.^{2, 3} It has been known as eosinophilic leukemia and since endocarditis is a frequent feature, it is also referred to as eosinophilic fibroplastic endocarditis.⁴ The case described is unusual in that the patient was without any symptoms whatsoever throughout the four or more years he had eosinophilia and was showing no evidence of tissue infiltration at the time of his investigation.

Case Report

A 68-year-old white male was admitted to the hospital for workup of an accidentally discovered high eosinophil count. The patient had but one complaint: some slight tightness in the chest for the previous few days off and on without associated shortness of breath, cough, or expectoration. He had also experienced some tightness in the back of the neck and dizziness approximately a month prior to admission. He gave a history of hypertension of very recent onset for which he receives hydrochlorothiazide, 50 mg/day.

Physical examination revealed a normally built, muscular, ruddy complexioned male patient with blood pressure, 130/80; pulse, 90/min; respirations 24/min; normal temperature; slightly increased color of the oral mucous membranes; slight venous engorgement of the fundi without hemorrhages or exudates; and

no palpable lymphadenopathy. There were no auscultatory or other positive findings in the lungs; cardiac examination showed no audible murmurs or signs of cardiac failure or arrhythmia. The remainder of the examination yielded essentially normal results. A review of the patient's blood count revealed: 1970: hematocrit, 49%; hemoglobin, 16.8 gm/100 ml; WBC, 12,000 with 54% polymorphonuclears, 33% lymphocytes, 6% monocytes, and 7% eosinophils; in December 1974: WBC, 10,200 with 31% polymorphonuclears, 30% lymphocytes, 32% eosinophils, 7% monocytes; and hemoglobin, 16.6 gm/100 ml; 1976: WBC 10,500 with 32% polys, 42% lymphocytes, 25% eosinophils, 1% basophil; and hemoglobin, 16.9 gm/100 ml. Subsequently with normal hemoglobin levels and high normal total WBC counts, he had shown percentages of eosinophil up to 26 per cent prior to the hospitalization, this time with a WBC, 37,500 with 66% eosinophils, and hemoglobin, 18.3 gm/100 ml. Platelets were normal throughout. The most recent blood count shows WBCs, 8,300 with 30% polymorphonuclears, 30% lymphocytes, 2% bands, 1% monocytes and 37% eosinophils. No abnormal neoplastic cell was noted in any of the blood counts; platelets were 323,000. Chemistry profile showed elevation of uric acid to 8.2 mg (normal up to 7.4 mg). Alkaline phosphatase was extremely high at 604 (normal up to 258 IU). Arterial blood gases showed pH, 7.43; PCO₂, 42.1; PO₂, 53.5; and O₂ saturation 87.8 with patient breathing room air. Pulmonary function test showed forced vital capacity (FVC) of 2.47 l (73% of predicted); forced expiratory volume/sec (FEV₁), 1.25 l (50% of predicted); and maximum midexpiratory flow (MMEF), 0.53 l/sec (21% of predicted). Urinalysis revealed a few bacteria and no other remarkable features. Leukocyte alkaline phosphatase was 117, the upper count being 100. The patient's total blood volume was 76.3 ml/kg, and red cell volume was 387 cc/kg of the patient's body weight. Antinuclear antibody was negative. The alkaline phosphatase isoenzyme was found to be of liver origin. Stool cultures for parasites and ova yielded negative results. Chest x-ray and liver-spleen scan were normal. Upper gastrointestinal series showed sliding hiatal hernia with some reflux and tertiary esophageal contractions, and it was felt that the patient's chest discomfort was probably related to this. The barium enema showed extensive diverticulosis; the intravenous pyelogram was normal with slight prostatic enlargement, and the EKG was within normal limits. Bone marrow aspirate showed eosinophilic hyperplasia of the bone marrow with all eosinophils appearing mature. Diffusion capacity of the lung was 16.3 ml/mm/min, within normal limits. Echocardiography was normal showing no evidence of stiffness of the ventricular walls, chamber enlargement, or valve disease. Liver biopsy showed no infiltration of liver tissue with eosinophils. Serum IgE was 6 μ /ml (normal 14-100 μ /ml). The patient was discharged to continue the hydrochlorothiazide for the control of high blood pressure and was instructed to report periodically for blood counts for a followup on eosinophilia. Among the differential diagnoses, bronchial asthma and polycythemia vera were considered. Neither is associated with severe eosinophilia, and the patient had no clinical features of the former. As for P. vera, two major and several minor criteria for its diagnosis were not met. Due to lack of any symptoms, no treatment has been initiated and the patient is currently under outpatient observation.

Discussion

Although great increases in eosinophiles in the circulation have been referred to as eosinophilic leukemia, the term is purely descriptive as HES does not have many of the features common to other leukemias, *viz.* malignant potential, bone marrow failure, pancytopenia, and increased incidence of infections and bleeding. Also, as far as is known, no consistent chromosomal abnormality has been reported in HES. The major pathology in

this condition is organ infiltration with eosinophil cells, almost all of them appearing morphologically normal and causing various degrees of organ system failure, particularly cardiac failure which most frequently leads to death.² The prognosis of HES has been, until recently, considered poor. In a review of 57 cases, the mortality was more than 80 per cent in three years;² in another series,⁵ mortality was 78 per cent at 12 months. However, two recent reports^{3, 6} show excellent prognosis. In one, of 26 cases described by Parillo *et al.*,³ only five required treatment and the remaining did well on steroids and cytotoxic drugs giving a total mortality of only 4 per cent in three years.

The condition is probably a heightened response of the eosinophil to some extraneous or endogenous antigen and the spectrum of this response can manifest from mild eosinophilia — *e.g.* in drug reactions and contact allergies to severe eosinophilia as in HES — and may progress to the more serious consequences such as organ system infiltration or blast cell proliferation. The spectrum of this disease entity is remotely similar in some respects to the plasma cell dyscrasias where bone marrow plasmacytosis is seen in mild to moderate degree in immunologic stimulation such as chronic infections with frank neoplasia, and bone destruction in the other extreme in multiple myeloma. The more serious prognostic factors seem to be: (1) extremely high granulocyte counts of over 100,000; (2) presence of blast cells in the peripheral blood; and (3) presence of congestive heart failure.² Good response to steroid treatment appears to be associated with an increase in the levels of immunoglobulin E.⁷

In contrast to the cases described in the literature, the case described here is unique in that the patient had no symptom whatsoever despite the high eosinophilic count that he has manifested for several years. He had also received no treatment, had maintained general good health, and at the time of investigation tissue infiltration could not be demonstrated with the available techniques. From the review of the literature, it does not appear that a similar case has been reported.

Summary

A case of the hypereosinophilic syndrome has been presented. The case meets some of the criteria for this diagnosis and further

emphasizes the recently reported fair prognosis in some cases of this disease. However, the patient did conform to previously reported indicators of good prognosis, *i.e.*, the absence of blast cells in the peripheral blood, massive leukocytosis, and congestive heart failure.

B. Viswanathan, M.D., Memorial Hospital, 600 Madison, Topeka, KS 66607.

References may be obtained from the author.

What They're Saying

... there's another expensive problem with all this paperwork after it's been collected and published. Where to store it. There are 15 federal record centers in the United States with 13 million cubic feet of records, 2,300 miles of shelves for eight billion individual pieces of paper — everything from half century old passport applications to records of the number of mourning doves. Another problem — twice as much paper comes in each year as can be disposed of, and the cost of storing all this paper is \$8 million a year. However, your government has not stood idly by. As you've undoubtedly heard, the Congress established a paperwork commission which studied the paper blizzard for two years at a cost of \$10 million and came up with a remarkable finding, enunciated by the chairman of that commission, Congressman Frank Horton: "Basically, the principal culprit is the Congress itself. The members of Congress are just not able to respond adequately to the problem, we just do it."

MIKE WALLACE, *60 Minutes*, CBS-TV (1/14/79)

MATCH LINE

**Mid-America
Telephone Consultation Hot Line**

A Free Cancer Consultation Service
For Health Professionals

**CALL COLLECT
1-913-588-5734**

For Immediate Personal Consultation
With Cancer Specialists At The University
Of Kansas Medical Center

**A Service of The Mid-America
Cancer Center Program**



Current COMMENT

Diagnosis and Management of Acute Urethritis

**GUILLERMO COUCHONNAL, M.D. and
CHIEN LIU, M.D., Kansas City, Kansas**

URETHRITIS is common in sexually active young people, particularly males. While gonococcus remains an important causative agent of urethritis, the incidence of nongonococcal urethritis (NGU) is increasing rapidly. Although slightly more than one million cases of gonorrhea were reported to the United States Public Health Service in 1977, the actual number is considered to be several times higher. NGU is not a reportable disease; consequently no nationwide statistics are available.

In Great Britain, where NGU is a reportable disease, the annual number of NGU cases has increased more than four-fold in the last two decades. Presently almost two-thirds of urethritis cases reported among men in the British Isles are non-gonococcal.¹ In a study from the Center for Disease Control (CDC), of patients with symptomatic urethritis seen in venereal disease clinics, 54 per cent had NGU.² Likewise 62 per cent of patients seen at the Harborview Medical Center VD Clinic (Seattle) had NGU.³

Causes

Human beings are the only natural hosts of *Neisseria gonorrhoeae*; in them it produces an array of clinical symptoms. Acute urethritis is the most common manifestation in male patients. The usual incubation period is two to seven days. The risk of a male patient acquiring gonorrhea is about 35 per cent after a single exposure to an infected female, but rises to 75 per cent with repeated exposures. The risk of gonorrhea transmission from male to female is unknown, but it could be higher than the risk of female to male transmission.

Nongonococcal urethritis (NGU) is an increasingly troublesome problem in many offices. This is true not only because of the marked increase of both forms of urethritis, but also because of the difficulty in the diagnosis and the separation of the two, and the choice of the most desirable therapy. Recommendations for diagnosis and management are included.

An infected male is generally symptomatic. However, recent studies have shown that urethral gonococcal infection was detected in 40 per cent of asymptomatic male contacts of women with symptomatic gonorrhea.⁴

In female patients with gonorrhea, 75-90 per cent are asymptomatic. The most common site of infection is the cervix, followed by the urethra, anal canal and pharynx, in descending order. Approximately 20 per cent of women with cervical gonorrhea have salpingitis as ascending infection. Disseminated gonococcal infection manifested as polyarticular arthritis or tenosynovitis and cutaneous lesions is seen in both sexes but occurs more commonly in women.

Nongonococcal urethritis is diagnosed when *N. gonorrhoea* cannot be isolated from urethral discharge in patients with urethritis. The most important causative agent is *Chlamydia trachomatis*. In England and in the United States, *C. trachomatis* has been isolated from the urethra of 30-50 per cent of men with NGU, from 20-30 per cent of men with gonorrhea, and from 0-5 per cent of sexually active men with no urethritis.⁵ A high percentage of men with gonorrhea also have positive isolations of *C. trachomatis* due to double infections acquired

From the Department of Medicine, University of Kansas School of Medicine-Kansas City.

Address reprint requests to Dr. Couchonnal, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

from sexual contacts. Since *C. trachomatis* infection has a longer incubation period (14-21 days) than the gonococcus, it may also be responsible for post-gonococcal urethritis seen in men after a cure of gonorrhea, as penicillin and spectinomycin have no effect on *C. trachomatis*.

Beside *C. trachomatis*, a cell wall deficient organism, *Ureaplasma urealyticum* (T-strain mycoplasma), is also implicated as a cause of NGU, although its causative relationship is less well established than that of the chlamydias. In about 10-20 per cent of NGU, neither chlamydias, ureaplasmas nor aerobic or anaerobic bacteria could be recovered.

Diagnosis

Gonococcal Infections. Laboratory diagnosis of gonococcal infection is best accomplished by microscopic examination of gram stain smears made of urethral discharge or endocervical exudate. Positive diagnosis is made when typical gram-negative diplococci are seen within polymorphonuclear leukocytes. Diagnosis is equivocal when only extracellular gram-negative diplococci are seen and is negative if no gram-negative diplococci are present. In the hands of an experienced microbiologist, the sensitivity and specificity based on these criteria approach 98 per cent in gram stain examination of urethral exudates from men. In women gram stain examination of purulent cervical exudate has a 60 per cent sensitivity.

Establishment of gonococcal infection in equivocal or negative gram stain cases depends on culture of the gonococcus. For best results, urethral or cervical specimens for culture should be collected using swabs made of synthetic fibers such as calcium alginate because the presence of unsaturated fatty acid on cotton fibers may inhibit the growth of gonococci. Chocolate blood agar or modified Thayer-Martin medium with CO₂ incubation are best for gonococcal growth. For physicians who do not have easy access to a microbiology laboratory, specimens may be inoculated into a transport medium such as Transgrow and shipped to state laboratories for culture.

Nongonococcal Infections. When a patient with urethritis does not show gonococci in urethral discharge by microscopic examination and culture, and when a gonococcal urethritis patient continues to have urethritis symptoms despite a successful antimicrobial therapy, diagnosis of NGU should be entertained. Confirmatory laboratory diagnostic procedures for chlamydial and ureaplasma infections are available, but at present are not generally

performed in most medical microbiology laboratories.

Chlamydias are isolated relatively easily in tissue culture. The success of recovery is 95-100 per cent from urethral or cervical specimens. Patients with chlamydial NGU will also show serum antibody rise by microimmunofluorescence tests.

Pathogenetic association of ureaplasma to NGU is, as yet, not firmly established. However, ureaplasmas can be inoculated onto agar and fluid medium specially formulated for culturing these organisms. Serologic tests are not very helpful.

Treatment

Gonococcal Infections. Penicillin G is the preferred drug for treating infections caused by non- β lactamase producing gonococci, as well as curing concomitantly occurring incubating syphilis. The principle of therapy is to obtain a high penicillin blood level for a relatively short period of time. Therefore, long acting penicillin such as benzathine penicillin, while ideal for treating syphilis, has no place in the treatment of gonorrhea.

In uncomplicated gonococcal infections, one intramuscular injection of 4.8 million units of procaine penicillin plus one gm of oral probenecid is sufficient. Alternatively, ampicillin, 3.5 gm or amoxicillin 3.0 gm, with probenecid one gm — both given

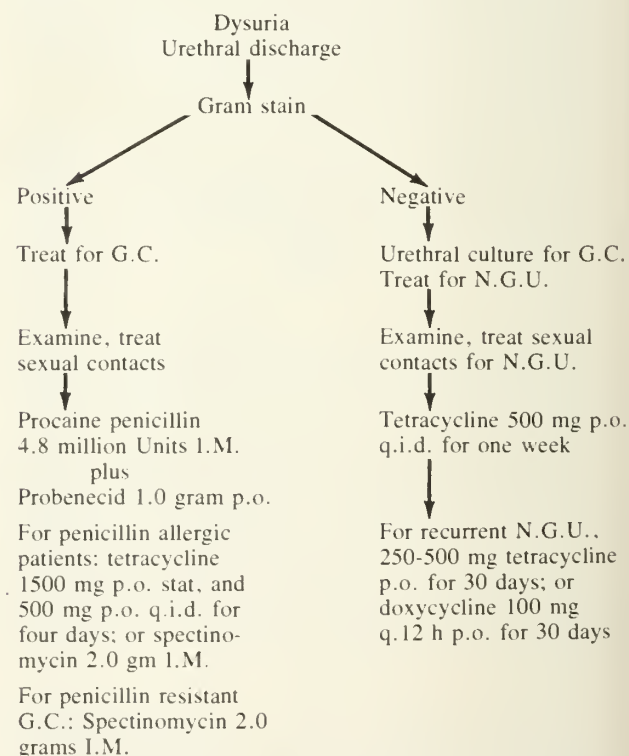


Figure 1. Flow Sheet for Management of Urethritis.

TABLE I
CHOICE OF ANTIBIOTICS FOR TREATMENT OF URETHRITIS

<i>Disease Category</i>	<i>Treatment of Choice</i>	<i>Alternative Regimens</i>
Uncomplicated gonorrhea and sexual contacts	Procaine penicillin, 4.8 million units, divided and given in two sites intramuscularly together with 1 gm probenecid by mouth	1. Oral ampicillin 3.5 gm or oral amoxicillin 3.0 gm together with 1.0 gm probenecid orally 2. Tetracycline 1.5 gm orally, followed by 0.5 gm orally four times a day for four days 3. Spectinomycin 2.0 gm intramuscularly
Disseminated gonococcal infection	Crystalline penicillin G given 10-12 million units per day intravenously until improved, followed by 0.5 gm ampicillin orally four times a day to complete a seven day course of treatment	For penicillin-allergic patients: Tetracycline 1.5 gm orally, followed by 0.5 gm tetracycline four times a day for seven days
Nongonococcal urethritis and post-gonococcal urethritis	Tetracycline 1.5 gm orally followed by 0.5 gm orally four times a day for seven days	(If symptoms fail to improve or recurrence of NGU, a prolonged course of tetracycline 0.25 to 0.5 gm four times a day for 30 days may be tried)

orally — can also be prescribed when the patient refuses parenteral penicillin therapy. In patients allergic to penicillin, either tetracycline or spectinomycin may be used. Single dose tetracycline is no longer recommended. The dose of tetracycline should be 1.5 gm initially by mouth followed by 0.5 gm by mouth four times/day for a total of four days.⁶ Other forms of tetracycline may be used, but show no therapeutic advantage over the generic tetracyclines. Spectinomycin, 2 gm intramuscularly, in either male or female patients is sufficient. The cure rate was 93-97 per cent among various regimens as reported in a National Gonorrhea Therapy Monitoring Study.⁷

For disseminated gonococcal infections, two million units of crystalline penicillin G should be given intravenously every four hours. If sufficient improvement is seen after three to four days of intravenous therapy, the treatment may be changed to ampicillin, 500 mg orally 4 times/day, to complete a seven to ten day course of therapy. Studies have shown that the gonococcal strains causing bacteremia are usually penicillin-sensitive, but seem to be more resistant to complement-mediated killing by natural antibody in the patient's serum.

Penicillin-resistant strains of gonococci have been reported in the United States since 1976. These or-

ganisms were probably introduced from the Far East. The mechanism for these gonococci becoming penicillin-resistant is due to a plasmid acquired by such organisms that produce β -lactamase. Fortunately, these β -lactamase-producing gonococci are not common in the United States and are still quite sensitive to spectinomycin. Treatment of patients harboring these strains of gonococci should be with spectinomycin as outlined. Tetracyclines should not be used as gonococci that are penicillin-resistant are also resistant to tetracyclines.

Nongonococcal urethritis. In patients with NGU either from the beginning or who develop post-gonococcal urethritis after therapy, tetracycline hydrochloride, 500 mg four times/day for seven days is recommended. After seven days of tetracycline therapy nearly all patients with NGU are improved. Those few patients who fail to show any improvement require evaluation to determine if the failure was due to poor compliance, trichomoniasis, or another cause of urethritis.

It is important to treat both patient and contacts for gonococcal and nongonococcal infections. The reasons for treating both groups are: (1) exposed contacts may become infected; and (2) infected contacts if untreated may reinfect the patient or may spread the infection to other individuals.

Self-Assessment Questions

1. What is the incidence of non-gonococcal urethritis (NGU) in a population of patients seen in some venereal diseases clinics?
2. What is the most common causative agent for NGU; compare the incubation period for gonococcal urethritis and NGU.
3. How reliable is microscopic examination in diagnosis of gonococcal urethritis?
4. Name the treatment of choice for gonococcal urethritis.
5. Name the treatment of choice for patients with urethritis due to β -lactamase producing *N. gonorrhoeae*.

(Answers on page 433)

References

1. Department of Health and Social Security: Sexually transmitted diseases: Extract from the annual report of the chief medical officer for the year 1972. *Br. J. Vener. Dis.* 50:73-79, 1974.
2. Jacobs, N. F. *et al.*: Gonococcal and nongonococcal urethritis in men: Clinical and laboratory differentiation. *Ann. Internal Med.* 82:7-12, 1975.
3. Holmes, K. K. *et al.*: Etiology of nongonococcal urethritis. *N. Engl. J. Med.* 292:1199-1205, 1975.
4. Handsfield, H. H. *et al.*: Asymptomatic gonorrhea in men: Diagnosis, natural course, prevalence and significance. *N. Engl. J. Med.* 290:117-123, 1974.
5. Bowie, W. R. *et al.*: Nongonococcal urethritis. *Infectious Diseases*. (Hoeprich, Paul D., ed.) pp. 486-490, 1977.
6. Center for Disease Control: Recommended treatment schedules for gonorrhea, 1979. *Morbidity and Mortality Weekly Report* 28 (2):13-16, 1979.
7. Kaufman, R. E. *et al.*: National gonorrhea therapy monitoring study: Treatment results. *N. Engl. J. Med.* 294:1-4, 1976.
8. Holmes, K. K. *et al.*: Gonococcal infection. *Infectious Diseases*. (Hoeprich, Paul D., ed.) Second Ed. pp. 491-506, 1977.

NEW BRITISH DRUG FIGHTS BREAST CANCER

A newly developed British drug has proved effective in breast cancer that has spread to other areas of the body, says a report in the July 6 *Journal of the American Medical Association*.

The drug is tamoxifen citrate. Trade name in Great Britain is Nolvadex. There is no comparable U. S. product.

Tamoxifen was tested on 50 patients at the M. D. Anderson Hospital and Tumor Institute, Houston. These were breast cancer patients in whom conventional endocrine therapy and combination chemotherapy (drugs) had failed, says Sewa S. Legha, M.D. In all of them the cancer had spread.

Tamoxifen achieved a significant palliation of disease in 50 per cent of patients with far-advanced breast cancer that had failed to respond to conventional treatment, Dr. Legha declares. "Since this result was obtained at the cost of practically no side effects, the results are indeed remarkable."

There also are indications that tamoxifen will be useful in management of metastatic breast cancer in many different phases of the disease, says Dr. Legha. It can safely be considered the best choice for postmenopausal women who are likely to respond to hormonal therapy. It will provide opportunity for another remission in patients who already have been treated with other methods.

The research was supported in part by the National Cancer Institute.

**Are You Getting Your Journal
Regularly?**

If Not . . .

**Have You Notified the Society's
Executive Office of Your New Address?**

Send all changes of address to:

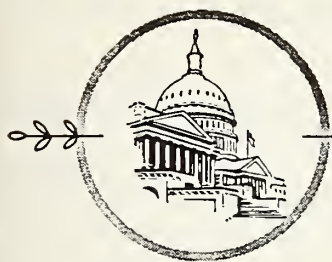
**THE KANSAS MEDICAL SOCIETY
1300 Topeka Avenue
Topeka, Kansas 66612**

The advertising in

THE JOURNAL

**keeps you informed
and helps pay the
publishing costs!**

**When the local
representative calls,
tell him you saw
his company's ad in
your journal.**



Socio- ECONOMICS

Medical Collections

Ed Note: This is the 13th in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December, 1978 and January, February, March, May, and June, 1979.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

THE AMA Department of Practice Management occasionally get requests from physicians saying, "Please send me some sample collection letters that will really produce results. I've got a lot of old accounts on my books and I want to clear them up."

Our answer is, "Doctor, there are no magic words." If you let accounts grow old on your books the chances for recovery are almost nil. The magic of a 95 per cent collection ratio is prompt and consistent follow-up.

Slow pay and delinquent accounts are again becoming a problem in some medical offices. Action needs to be taken promptly to keep them from becoming hard collection accounts.

There are three ways to keep informed on the status of your billing recovery: (1) Collection percentage is an indicator. If your collection ratio has been in the upper or middle 90 per cent and is now dropping to the lower nineties or high eighties, this is a warning; (2) The amount outstanding on your books is a yardstick. If your credit outstanding has been averaging two and a half to three times the monthly billing and is now three and a half to four months, you can anticipate a collection problem; (3) The best indicator is an age analysis of your accounts. If the age analysis report — hopefully you do one at least every three months — shows a marked increase in accounts that are 60, 90 and 120 days past due, it is time to take action.

This does not mean that you immediately rush out and purchase a lot of brightly colored statement stickers or a package of commercial collection letters that are "guaranteed" to "get the money." They might help momentarily, but too often the "guarantee" is meaningless and the public relations impact is negative.

The best collection program today is still a good billing and follow-up system. In competing for the consumer's dollar, a poor billing system is a handicap. Statements should be itemized and they must be sent out on time, with an addressed, return envelope enclosed. Improved collection recovery will more than pay the cost. Return postage is not necessary.

A program for prompt and consistent follow-up is essential. It may vary according to your particular situation. *You* design it to fit the special needs of *your* office. More important than the specific time schedule selected is that the plan be followed rigorously. If your office is not consistent in following the plan, there really is no plan at all.

The days of sending out four, five and six statements, a number of them with colored stickers attached that ask or demand payment, are gone — along with the three-cent stamp. A fifth or sixth statement can be ignored as easily as the first or second statement.

In the AMA brochure, *The Business Side of Medical Practice*, a collection timetable is listed as follows:

- 1st month — Send statement
- 2nd month — Second statement
- 3rd month — Send a reminder note
- 4th month — Send letter or preferably telephone
- 5th month — Write patient that since all communication has been ignored, the account is being turned over to a collection service.

First and second statements on accounts that have to be billed are certainly proper and in good business tradition. But if there is no response to the second statement 20 days after it was sent, a telephone call is in order.

This is not harassment. You want to find out if the

patient has a financial problem. This is the time to help the patient with a payment plan, if necessary.

There is nothing embarrassing about asking for payment of an account. The Medical Assistant should understand that this is a standard business procedure. It can be done courteously and cordially. If the patient has a financial problem, the telephone call offers an opportunity to help make payment arrangements before the situation gets completely out of hand. If your Medical Assistant needs help in this area, a copy of the AMA cassette/workbook *Medical Collection Methods*, will be helpful. The cassette program is designed specifically to explain and to demonstrate telephone collection follow-up. Also, the Kansas Medical Society annually presents workshops designed to assist MAs in facilitating medical collections. A Medical Assistant is not a professional collector and probably does not have the time, training, or inclination to be one. However, she can do an effective job of follow-up on slow pay and delinquent accounts to increase collections and reduce the outstandings, by consistently adhering to a good follow-up plan.

The magic of good collection recovery — 95 per cent or better — is in the system, not the words that are used. There are, of course, some words that are better than others to help motivate people, but they need to be used in a time-planned procedure. Typed words on a letter to an account that is hoary with age have little magic.

There will always be a few accounts that become hard collection items, but the method of handling these is another story. Your objective, and the best way to improve your billing recovery, is to keep as many accounts as possible from becoming "collector's items."

Buy U. S. Bonds

RNA Tumor Viruses

(Continued from page 417)

None of the steps in the multiplication of RNA tumor interferes with normal cellular processes. Therefore, cells infected with RNA tumor viruses do not die. The infected cells may release thousands of virus particles from its surface during the course of a single cycle of cell division. The integration of a single provirus into the host chromosome is sufficient to transform a susceptible normal cell into its cancerous equivalent. Transformation can occur rapidly. Within 24 hours after infection with Rous sarcoma virus, an entire culture of normal fibroblasts can become synchronously converted into rounded transformed cells.

A single viral gene called the src gene (sarcoma-genic protein) is responsible for transforming normal cells into their cancerous equivalent. The virus-specific protein coded for by the src gene is also necessary to maintain the transformed state. A number of mutants of Rous sarcoma virus are temperature sensitive for transformation. The mutant viruses grow well at both permissive and nonpermissive temperatures, but they transform cells only at the permissive temperature. When cells transformed at the permissive temperature by mutant viruses are shifted to nonpermissive temperatures, the cells revert back to normal. The process is reversible, and allows cells to be shifted back and forth between transformed and normal states at will. The conclusion from these experiments is that a single virus-specific protein can cause transformation and that continued function of the virus-specific protein is necessary to maintain the transformed state.

Recent experiments have revealed that the virus-specific protein which causes transformation (the src product) has enzymatic activity and functions as a protein kinase (an enzyme that phosphorylates protein).

WORKMEN'S COMPENSATION PAYROLL AUDITS

Within the next sixty days, field payroll auditors of Casualty Reciprocal Exchange will be calling on those of you who have placed your insurance with that organization.

Your cooperation in having the necessary records available for the completion of the audit will be appreciated. The sooner the audits are made, the sooner the Dodson Insurance Group can calculate the earned savings for the past year and make the necessary distribution.

In case you have been asked to provide a voluntary report instead, you can help materially in reaching an early determination of savings by returning the requested information as promptly as possible.

The President's Message

News Item *Topeka Capital Journal* September 15, 1981:

The Kansas Corporation Commission today received a request from the Kansas Medical Society for a requested 8 per cent fee increase. The Society cited rising costs of materials and the inflationary wage spiral as reasons for the request. The Commission will meet next week to hear arguments for and against this increase.

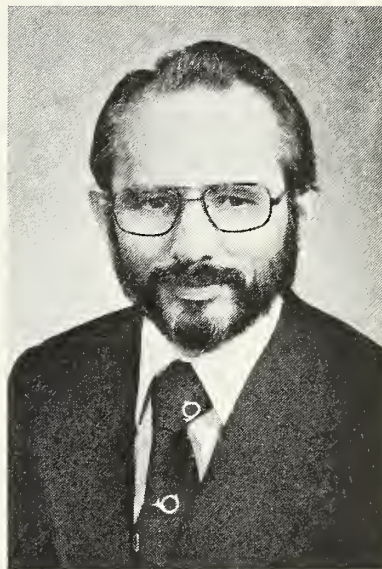
The above caption sounds bizarre today; however, the utility concept of medical care is gaining some increasing support from groups who feel that medical care costs are increasing too rapidly.

Walter McClure, Ph.D., Minnesota, who spoke at the recent KMS meeting in Hutchinson, warned members that there were only a few options as to how to contain medical costs. One of these options would be the utility concept (which he personally did not favor). In Dr. McClure's opinion we must somehow control costs or we will be subject to increasing regulation and eventually end up as a public utility.

A second option would be to use insurance in a different way than we are accustomed to so that insurance policies would pay only after a person had spent 10 per cent of his income on medical care. In other words this would be a form of catastrophic insurance without any front dollar coverage. This concept Dr. McClure felt would be politically impossible to bring about at this time.

The third concept would be to allow the exertion of "market forces" into the practice of medicine. By this he referred to the introduction of alternate methods of delivery of health care so that people could choose the type of coverage they preferred on an annual basis with several options offered to every person. These options could include fee for service, IPA, Blue Cross-Blue Shield, and HMO type organizations. In this way those providers who gave efficient and satisfactory service would be chosen more often than those providers who gave inefficient and expensive type service. In this way so-called "market forces" would contain costs by rewarding efficient operations, and penalizing inefficient, expensive operations. The "marketplace" would then keep the health care costs down.

Whether or not you agree with Dr. McClure, cost containment is the number one medical-political topic today. Perhaps there are other options than



those listed above. Which do you favor? Perhaps you prefer things as they are. If so, you and I must do a better job of controlling medical costs in our own practice. Don't order electrolytes if a potassium is what you need. Don't order an H and H if a hematocrit will do, or a CBC if a WBC is what you want. Could these tests be done on an outpatient basis, or is hospitalization essential? Cost containment is my responsibility and your responsibility.

The KMS has a committee studying alternate health care delivery systems. We are concerned about the possibility that too much emphasis on cost containment will result in decreased quality of health care, but we are determined to be in the forefront of new developments in the medical delivery system with a continued, concerned, professional outlook for the welfare of all Kansans. Interested physicians are urged to write to the Kansas Medical Society to express their opinions and concerns in this area.

Fraternally

Donald D. Gering, MD

President



Editorial COMMENT

Several weeks ago, the Golden City's leading (and only) Sunday paper carried an excellent feature story about a senior medical student from the UKSM-Kansas City, Joyce Oster, who was a preceptee with that remarkable medical couple, Linda and Roger Warren, in the Hanover-Washington area. It was strong on human as well as medical interest, and its appearance demonstrated that practitioners of medicine — and in particular, those preparing to be — are still good copy.

Our attention, however, was drawn to one remark attributed to the young lady whose sojourn with the Warrens happened to coincide with the annual meeting of the Kansas Medical Society in Hutchinson. She accompanied Roger to the meeting which, she reported, "was interesting because it was an aspect of the political side of medicine I'd never been exposed to before."

We experienced a momentary surprise at this interpretation of the annual meeting — but only momentary as we realized that our concept of the Kansas Medical Society — and its annual meeting — encompasses (by virtue of more than a few years' contact) its scientific and professional functions that would not be apparent on this initial exposure. Of course, we have expounded at length on this very thing — the increasing politicizing of medicine, and Kansas medicine in particular. So it was the surprise of looking at something one has long known and assigned a characteristic form to, only to realize it would look quite different through other eyes. But if old acquaintance tends to ignore the alterations, new acquaintance may not get a complete picture unless it looks beyond the wrinkles.

In fact, the Kansas Medical Society has, from its inception, been politically involved — and evolved. From its chartering by territorial political action through the efforts to get a medical department (and later a medical school) at the University of Kansas, through the tumultuous activity of getting a medical practice act (with its subsequent revisions) legislated, on down through the myriad problems of more recent years, the Society has been embroiled in

The Stuff of Politics

political activity. Originally, the impetus for formation of the Society was primarily professional and social. Our sparsely distributed forebears enjoyed their annual get-togethers not only for the hope of gaining — and giving — some medical knowledge but for the chance to spend a little time with someone who spoke the same language. But they brought to the Society a political awareness characteristic of the inhabitants of the fermenting state. So it has been this combination of features that has produced a spirit in the meetings that hasn't been entirely eradicated by other pressures. But the patterns of education and medical service have changed. Professional education is largely in the hands of special groups, and as organized medicine has had to speak out increasingly on political and economic matters, it has, at all levels — county, state, and national — become identified as embodying only that purpose. For example, to mention the AMA is, in the view of most people (including some physicians), to refer to a political behemoth dedicated to advancing the interests of physicians. Even those perceptive enough to see that there may be some ultimate patient benefits from its actions usually ignore or are unaware of the multitude of other services it maintains. The same applies to state organizations including this one.

But this line of thought brings us not just to the purpose of expounding on the less apparent, non-political functions of the organization. Rather it prompts consideration, regenerated by the recent fact of that state meeting, political or no, of the tremendous amount of individual effort expended by members of the Society in order that this exercise of political action can take place. The formal meetings of the various elements — Executive Committee, Council, House of Delegates, committees — consume a formidable amount of time but are in themselves only the culmination of many hours of individual effort. It can be argued that the participants are acting from personal choice, and involvement, like virtue, is its own reward. There is truth in this, of course, but there must be somebody's law that says that such duties tend to expand geometrically be-

tween acceptance and accomplishment — especially if the performance is productive.

Unfortunately, the term “politics” has become prostituted by some of its seamier applications as well as the rancor of those whose interests have suffered in its performance. But it warrants our recalling that it is the expression of that great mass of individual purpose and effort and feeling coalesced into group action, and criticism of political activity is ultimately criticism of ourselves. Again unfortunately, somewhere in the process of political fruition, the best of ideals are apt to lose the sense of personal involvement and expression so that the methods are too easily assailed as soulless, insensitive or corrupt, and any apparent achievement of good is discounted as inadequate, transitory, or fortuitous. The democratic process at any level can be tiresome, frustrating, often confused and misleading, but durable because it produces a matrix of personal involvement which supports the ultimate form of action.

The extent of this involvement, then, is usually limited only by the degree of dedication of the participants. At least, the KMS has come to recognize that the leading role, the presidency, puts too great a demand upon any physician with practice and family responsibilities and has elected to compensate the office. It must be remembered, however, that office comes only to those who have already contributed lavishly of their time without remuneration — other than personal satisfaction and peer approbation — and past presidents invariably serve in other capacities long after their terms are over. But there are literally dozens of members who, in other roles and with scant recognition, are giving form and character to this political entity.

Nor should we forget the staff which, though compensated, contributes well beyond the formal designation of the salary schedule. These people provide a continuity that conditions the direction of society actions as well as an administrative base for stability. They are, to many who do business with this organization, the Kansas Medical Society, and we can congratulate ourselves for having attracted and commanded the interest and loyalty of a singularly effective group of people.

So these individuals and the membership at large, with their diverse contacts with the community, are the elements of the political structure of the Kansas Medical Society. Our concern at this writing is that this young lady (now a physician in fact, since she has since graduated) who very correctly observed the annual meeting as an exercise in political action, medical style, recognize this as an essential and

proper and basically personal exposition of medical action. Her comment indicated that she had been occupied with other things and that, we suggest, is fortunate and as it should be. There has been increasing emphasis on the formation of student groups in many disciplines with the immediate or subsequent conversion of them into political action groups. This has the purpose of politics for the sake of politics as the desired end. But if accomplishment of optimum medical service is the desired end, it seems more suitable for the participants to gain a solid foundation in medical awareness and qualification that can be taken to the political arena, rather than to proceed from a political base to infiltrate the medical scene.

We hope Dr. Oster will elect to practice in Kansas. She was fortunate in her assignment of preceptors, which should be a distinct inducement. And we hope she becomes an active contributor to the political activities of the KMS. We hope she keeps in mind that the increasing pressure of regulation and extrinsic control will keep her generation busy protecting the principles of medical service as they are translated into patient and community service, even though this will make her generation vulnerable to the charge of “political” motivation — as past generations have been. But it will require the individual efforts of numerous concerned physicians to maintain the viable and valid political structure they will need. — D.E.G.

Diagnosis and Management of Acute Urethritis

(Continued from page 428)

Answers

1. Fifty-four to 62 per cent of patients with symptomatic urethritis seen in two venereal diseases clinics were found to have NGU.
2. The most common causative agent for NGU is *Chlamydia trachomatis*. The incubation period for gonococcal urethritis is 2-7 days as compared to 14-21 days for *C. trachomatis* urethritis.
3. In the hands of an experienced microbiologist, the presence of typical gram-negative diplococci within polymorphonuclears seen on smears of urethral exudate approaches 98 per cent accuracy in diagnosis. In examination of smears from endocervical exudate from women, the accuracy is about 60 per cent.
4. Procaine penicillin, 4.8 million units, divided and given intramuscularly in two sites, together with 1 gm probenecid by mouth.
5. Spectinomycin, 2 gm intramuscularly.

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	(913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission ..	(913) 362-4040
Roy Neil, M.D., Hays	(913) 628-3215
George M. Penn, M.D., Topeka	(913) 234-9566
Ivan Rhodes, M.D., Wichita	(316) 685-1291
Alex Scott, M.D., Junction City	(913) 238-2518
Max Teare, M.D., Garden City	(316) 276-7689
Virginia L. Tucker, M.D., Lawrence	(913) 843-3750
Kermit Wedel, M.D., Minneapolis	(913) 392-2144
Kansas Medical Society, Topeka	(913) 235-2383/235-3619

INSTITUTE ON THE ART OF NEGOTIATIONS

October 13-14, 1979

Hilton Inn, Salina

13 hrs CME Cat. I

Fee: \$50

The Kansas Medical Society, in cooperation with the American Medical Association, and under the direction of J. Paige Clousson, J.D., Director of the AMA Department of Negotiations, is pleased to offer a day-and-a-half seminar in the development of the art of negotiation.

Why You Should Develop the Art of Negotiation

Consider —

that medical care is no longer between just physician and patient. You are compelled to relate to federal, state and municipal government agencies, to hospital boards and administrators, to insurance carriers, to your peers and to consumer groups.

Consider —

that skillful negotiation can bring about solutions to many problem areas.

Consider —

the advantage of avoiding self-defeating negotiation styles such as responding to accusations with denial, defensiveness, or offensive criticism.

Consider —

developing talk skills such as assertiveness, trade-off statements, workable compromise.

About the Course

In a step by step how-to program, consisting of presentation, full participation, questions and answers, and a session in which you act as a member of a negotiating team, you will learn the rules, secrets and techniques of skillful negotiation. This how-to-do-it program focuses on increasing awareness on styles of negotiating, confronting others constructively, defining a conflict constructively, getting an accurate perception of the other's position and feeling, making sure there is correct and effective communication in a conflict, developing a climate or atmosphere for negotiations, and structuring issues and strategies in resolving the conflict. It will enable you to choose a negotiation style that suits your own personality.

Course Materials

Each participant will receive a workbook designed to incorporate notes with printed material. The workbook will contain all the materials used, including outlines of each main topic, reference materials, cases and problems. It is a vital part of the program and is one ingredient in the systematic learning approach used to make the experience optimal. You will use this workbook time and time again in all your future negotiating.

The Seminar will be a day and a half in length, beginning promptly at 8:30 AM the first day, and ending at about 1:30 PM the second day. You should plan to arrive the night before the seminar begins. A block of hotel rooms have been set aside, and you should contact the Hilton Inn directly for room reservations. (Hilton Inn, 5th and Iron Streets, Salina. Phone: 913/827-0461.)

The registration fee of \$50 must accompany your registration. The fee is used to offset the cost of program materials, faculty expenses, and meals.

The program is approved by the AMA Council on Continuing Physician Education for 13 hours Category I CME Credit for the Physician's Recognition Award of the American Medical Association.

Please complete the registration form below and return with your check.

TO: The Kansas Medical Society

1300 Topeka Avenue

Topeka, Kansas 66612

Phone: 913/235-2383

Please register me for the Negotiations Seminar on October 13-14, 1979, at the Hilton Inn in Salina. Enclosed is my registration fee of \$50.

Name: _____

Address: _____

Phone: _____

Professional Medical Advertising

An Overview

HOWARD N. WARD, M.D., J.D.,* *Topeka*

The purpose of this paper is to present an overview of professional medical advertising. A brief history of this subject reveals evidence of flagrant abuse and public harm in the past. Nevertheless, legitimate consumer concerns and current legal standards require that meaningful, non-deceptive public communications be permitted when presented in a proper time, place, and manner. Responsible members of the medical profession, with legal counsel, should work with the state legislature to generate appropriate statutory guidelines for regulating this activity.

Introduction

PRESSURES from a variety of sources during the past several years have converged on the issue of professional medical advertising with the result that individual physicians and organized medicine are being compelled, if not mandated, to deal with this subject in an affirmative manner. Some of these forces include: (1) the rise of consumerism; (2) a change in the protection afforded commercial speech by the United States Supreme Court; (3) an accusation by the Federal Trade Commission (FTC) that organized medicine has used medical ethics and its restraint on solicitation to unreasonably restrain competition; and (4) the use of commercial advertising by some members of the medical profession itself. This disconcerting situation is not unique and, in fact, is being experienced by all of the professional occupations. Members of the legal profession have already taken significant steps toward developing ethical guidelines designed to protect the public, serve the goals of the profession, and comport with the law. It is now essentially certain that the other professions will have to perform this task within the near future. The question is how this should be done in order that the end result will provide the public with meaningful and honest information without impairing the

respect, public trust, and dignity of the profession. Furthermore, all of this must be accomplished within the bounds of the law and in a manner that is commensurate with medical ethics and ideals. It is a difficult dilemma, to be sure, but the complexity and perhaps even distaste for this issue do not permit medicine to shun it. Accordingly, this paper will review the various aspects of this problem and attempt at least to shed some light on its solution.

History

In the United States there is a substantial record of the effects of unlimited, unrestrained medical advertising. During the 19th century, one of the most common advertising techniques used was the testimonial. (Draper, *Medical Advertising 1800 to 1850*, 74 *New York State Journal of Medicine* 568, March 1974.) The testimonial was believed to be of greatest impact if a prominent person were quoted and the clergy was considered exceptionally credible. Although many of the persons quoted may have written the testimonials, it is considered likely that the advertisers wrote the statements and used the names without consent on some occasions, and on some occasions the entire testimonial was fictitious. In many of the advertisements, the diagnosis did not seem important. That is, the treatment was offered for maladies of all kinds and, in some instances, for man or beast. Because health care was so poorly regulated, a great deal of this was quackery practiced by non-physicians. A review of medical advertisements of the mid-1800s shows how pervasive this practice was. (Blinderman, *Medical Advertisements: Rhetoric in American Newspapers 1861-1865*; 74 *New York State Journal of Medicine* 1474, July, 1974.)

A more recent case in point, still within the memory of some living Kansans, involved a physician by the name of Dr. John R. Brinkley. This medical doctor, during radio broadcasts, responded to letters and telegrams concerning health problems by prescribing by specific number a variety of medications which could be obtained from certain pharmacies throughout the middle west. The diagnosis was made

* Chairman, KMS Committee on Professional Advertising.

solely on the basis of the letter or telegram, and without the benefit of a proper history or physical examination. Dr. Brinkley received a "kickback" consisting of a part of the price of the prescriptions from the participating pharmacies. He also claimed success in restoring libido to aging males — "Dotards having desire without capability may cease to sorrow as do those without hope" — by performing a gonad transplant involving either goat glands or human glands with the charge being \$750 for the former and \$5,000 for the latter. The operation was viewed by reputable members of the medical community as being without any merit. On September 17, 1930, the Kansas State Medical Board revoked his license to practice medicine and surgery in the State of Kansas. The administrative hearing resulting in this action lasted from July 15, 1930, until September 16, 1930, involved a session during which Dr. Brinkley performed the "compound" operation in the presence of the board and the evidence from hundreds of witnesses including more than 400 patients who testified that they had been materially benefited by the operation. Many surgeons testified, including such noted men of the day as Drs. Mayo and Judd, that the operation was without merit. Dr. Brinkley appealed the decision of the Board to the judicial system of the state where the trial court dismissed the action and The Supreme Court of Kansas affirmed. (*Brinkley v. Hassig*, 130 Kan. 874, 289 P. 64.) Appeal was taken to the United States Supreme Court where it was dismissed for lack of a federal question and the Court's previous upholding of the particular Kansas statute involved. (*Brinkley v. Hassig*, 282 U. S. 800, 51 S. Ct. 39, 75 L. Ed. 720.) Dr. Brinkley then attempted to relitigate the issue in the Federal Judicial System, and the Circuit Court of Appeals, Tenth Circuit, ultimately held that he was not entitled to a re-examination of the issues because of the previous determination (*res judicata*) and the fact that the previous adjudication had been by the United States Supreme Court whose decisions the circuit court was bound to follow. (*Brinkley v. Hassig*, 83 F. 2d 351, 1936.) This episode is offered in some detail in order to demonstrate the complexity and difficulty of policing the profession where the violator elects to exercise all of his legal rights and to take the authorized action of the Board to the "mat." It is also a striking example of unprofessional conduct demonstrating emphatically the need for regulation and limitation of advertising in order to protect the state's interest in the public welfare. Hence, the search for answers to the previously propounded question of how to properly permit medical advertising does not begin in a vacuum.

Consumer Concerns and Issues

The current era is alive and ringing with consumer oriented groups and causes. The wisdom and tactics employed by some is certainly open to criticism. If one in a moment of detached reflection assesses the needs and desires of a consumer vis-a-vis the medical profession, it seems self-evident that consumers are entitled to meaningful and honest information about available physicians and medical services. To go further, some believe (*e.g.*, the Federal Trade Commission) that consumers need and can reliably assess more information than they now have in the physician-selection process. (Wickware, *Antitrust: New Pressures on Medicine*, 12 *Patient Care* 38, January, 1978.) Consumer groups have charged that lack of such information has resulted in monopoly and high prices of drugs and other medical products, and strict control of available medical care in the hands of practicing physicians and medical organizations. In the past few years, consumer groups have been successful in suits challenging the constitutionality of statutes and regulations that ban professional advertising. In a suit by consumers against the Virginia State Board of Pharmacy, the validity of a state statute declaring it unprofessional conduct for a licensed pharmacist to advertise the prices of prescription drugs was challenged. The United States Supreme Court held that commercial speech was not wholly outside the protection of the First and Fourteenth Amendments of the United States Constitution, and that the statutory bans violated these amendments and could not be justified on the basis of the state's interest in maintaining professionalism of its licensed pharmacists. (*Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc.*, 475 U. S. 748, 96 S. Ct. 1817, 48 L. Ed 2d 346, 1976.) The Court stated that "the State is free to require whatever professional standards it wishes of its pharmacists and may subsidize them or protect them from competition in other ways but it may not do so by keeping the public in ignorance of the lawful terms that competing pharmacists are offering." The Court also made clear that there may be proper time, place, and manner restrictions on commercial speech and that the First Amendment would not protect false, misleading, or illegal transactions. In that same year, a Federal District Court held that a Virginia statute prohibiting physicians from advertising to the general public directly or indirectly in any manner their professional services abridged the plaintiffs' First Amendment rights to gather, publish, and receive information about the physician's services through publication of a directory of factual

information to help persons select a physician. (*Health Systems Agency of Northern Virginia v. Virginia State Board of Medicine*, 424 F. Supp. 267, 1976.) More recently, the United States Court of Appeals, Fourth Circuit, avoided deciding a similar case by abstaining due to the fact that in the Court's opinion, an adequate remedy was available under state law by way of a declaratory ruling by the state agency. (*Public Citizen, Health Research v. Commission on Medical Discipline of Maryland*, 573 F2d 863, 1978.) The information that was to be contained in these directories included such things as name, address, type of practice, education, certification, foreign language capabilities, hospital and medical school appointments, availability during and after office hours, fees and billing procedures, credit arrangements, and laboratory and radiographic capabilities. It should be emphasized that the courts are not compelling such disclosure, but rather they are invalidating statutes that prohibit the physician from disclosing such information even if he so wishes. The type of facts sought for these directories appears to be informational and reasonable. Such information does not appear to be in conflict with the Principles of Medical Ethics of the American Medical Association (AMA) as published in 235 *JAMA* 2328, 1976. It is essentially a request for detailed and accurate information.

Additionally, some economists assert that the absence of consumer information is the single most important distinction between the health care industry and other industries.

Medical Concerns and Issues

Perhaps the initial averment of any argument opposed to advertising is the good-taste position. That is, commercial advertising would demean and denigrate the profession. Firstly, medicine is not a trade and it is not merchandise. It is a noble profession dedicated to serving humanity with an intense reverence for life in all of its stages. Hence, it should neither tolerate hucksterism nor submit to the morals of the market place. Medicine is a very personal and deeply human endeavor, and although it has always been competitive it has generally been so in a decent fashion. (Page, Does It Really Pay to Advertise?, 44 *Modern Medicine* 8, December, 1976.) The medical profession is dedicated to public service with the patient's interest paramount, and compensation is rendered for service performed; the patient should not be manipulated like an ordinary commodity. (Geist, Advertising in Medicine — A Physician's Perspective, 299 *New England Journal of Medicine* 483, August 1978.) The compassionate physician

does not advertise compassion, he practices it. The secret in the care of the patient is caring about the patient. The idea could follow from advertising that, instead of no secrets among doctors, there will be as many as possible, in order to assure a maximum profit. The medical profession was forced to purge itself of hucksterism in the past and yet, it is now being "asked" to again solicit under a more euphemistic rubric — marketing.

Secondly, medicine is not an ordinary consumer product subject to simple and objective consumer assessments. A physician, as one ultimately responsible for his patient's welfare, deals not only with routine matters relating to health but those that are serious and even life threatening. There is no experience more central to a given person than his concern about his own illness or death. Hence, the opportunity to prey upon the emotions of those who are ill is immense, if not immeasurable, and one can constantly witness this phenomenon in those with cancer and other life threatening illnesses as manifested by their seeking either after or even before accepted medical therapy, a variety of unproven and unorthodox methods of treatment (*e.g.*, Laetrile), often in violation of the law and at times at substantial expense. The opportunity to take advantage of these desperate, unfortunate patients is beyond description. In this situation one can be assured that the patient is not interested in supermarket or cut-rate care. Unrestricted advertising would permit the dishonorable physicians, although few in number, to inflict serious harm on the public under such circumstances. It would only cause larger numbers of unlettered people to be shunted into the hands of the charlatans. (Vogl, Is This What the FTC Really Wants? 54 *Medical Economics* 82, February, 1977.) Common sense, taste, and tact cannot be legislated. The issue is not merely truth in advertising but rather appropriateness. In the same article a reference by analogy is provided by Peter Allport. It is recognized that children, because of their immaturity, represent a special audience requiring stringent controls regarding advertising. In respect to medical advertising, it might be argued that most adults are in a sense "children." Therefore, it would be necessary to develop appropriate guidelines and that might even require geographic variations within the United States. Furthermore, it seems incredible that consumers could place unmitigated confidence and faith in medical advertising when the public has often been manipulated and subjected to unfair practices by commercial advertising in general.

Thirdly, if advertising is done, the cost will have to be covered by the consumer since it will become a

part of medicine's overhead. This increased cost would have to be offset by price reductions in response to competition in order to allow the consumer to ultimately appreciate a net gain. Because of an increase in demand provoked by marketing it is possible that the total cost of health care could actually increase. This is especially true if — as predicted by academicians and acknowledged recently by the Secretary of Health, Education and Welfare, Mr. Califano — we are on the verge of a doctor surplus. The increased supply of physicians along with an aggressive marketing program could markedly increase demand and total health care expenditure.

Fourthly, there is a spectrum of attention-seeking activities in addition to formal advertising. Such practices include conservative endeavors such as being active in medical politics, medical education, civic organizations, and religious institutions. At the other end of the spectrum of attention-seeking activity is the flamboyant publicity-seeking announcements illustrated by some of the pioneers of heart transplants. The charisma marshalled by some celebrities in medicine almost surely attracts the public and yet in some cases there may well be an inverse relationship between public adulation and the quality of medical practice. (Page, *Does It Really Pay to Advertise?*, 44 *Modern Medicine* 8, December 1976.) There certainly are notable exceptions such as Drs. M. DeBakey and Howard Rusk. In fact, a far more accurate way to select a physician would be to ascertain who is admired not by the public for whatever reason but rather by the profession. In other words, who is the doctor's doctor?

Organized medicine, through the AMA, has taken the position that advertising is permissible but solicitation is not. Section V of the AMA Principles of Medical Ethics states that a physician should not solicit patients. This is further delineated in the AMA's Judicial Council Opinion and Reports, Section 6, Advertising and Solicitation. Advertising means the action of making information or intention known to the public. Information listed by most directories would be permissible. Soliciting, on the other hand, means the attempt to obtain patients by persuasion, influence, using statements or claims that (1) contain testimonials; (2) are intended or are likely to create inflated or unjustified expectations of favorable results; (3) are self-laudatory and imply that the physician has skills superior to other physicians engaged in his field or specialty of practice; and (4) contain incorrect or incomplete facts, or representations, or implications that are likely to cause the average person to misunderstand or be deceived. Thus, the AMA does not proscribe adver-

tising in an informational sense but does prohibit solicitation as defined above.

A few physicians advocate, and indeed apparently practice, commercial advertising. Perhaps most illustrative would be some of the cosmetic surgery groups in Southern California. One involved physician asserts his ads are not phony, misleading, undignified or unprofessional, and he asserts that the AMA wants the public to think that if patients respond to his ads they have taken the first step toward doomsday. (Staff-Writers, California's King of Cosmetic Surgery, 7 *Legal Aspects of Medical Practice* 13, February, 1979.) However, other physicians have criticized the ads for not adequately disclosing the complications and risks involved in some of the procedures.

Most physicians probably would not advertise even if all prohibitions were eliminated. First, they do not need to at the present time. Second, the majority probably subscribe to the posture that it is conduct unbecoming to a professional. (Staff-Writers, *Would You Advertise?*, 7 *Legal Aspects of Medical Practice* 18, February, 1979.) However, the advent of a physician surplus could possibly change these attitudinal stances.

Legal Authority

The legal authority to deal with professional advertising emanates from several sources which include the United States Constitution (First and Fourteenth Amendments), statutes of the several states, case law, and state and federal agencies through administrative regulations and rulings. To gain a reasonable understanding of this area requires some historical background. In 1934, the United States Supreme Court reviewed a statute severely restricting advertising by dentists in the State of Oregon. The Court rejected a Fourteenth Amendment due process and equal protection challenge in upholding the statute. In so doing, the Court felt that the state had a sufficient interest in guarding the public against deception and also in protecting the morale of the profession against an unseemly rivalry which would enlarge to opportunities of the least scrupulous to justify the application of a different standard as to dentists as compared to others in a competitive market. The Court in effect supported a general prohibitory rule that banned both deceptive and non-deceptive advertising. It was reasoned by analogy by the commentators that bans on advertising by the legal and medical professions were also valid. The feeling was that the so-called learned professions were not subject to antitrust laws. (*Semler v. Oregon State Board of Dental Examiners*,

294 U. S. 608, 55 S. Ct. 570, 79 L. Ed. 1086, 1934.)

In 1975, the U. S. Supreme Court passed on the permissibility of a minimum fee schedule for lawyers. (*Goldfarb v. Virginia State Bar*, 421 U. S. 773, 95 S. Ct. 2004, 44 L. Ed. 2d 572.) The Court found that the nature of the legal profession does not in and of itself create any immunity from the Sherman Act. The antitrust laws would be applied to the private practice of law and by analogy, commentators have reasoned, to all learned professions. To be exempt from the antitrust law requires more than the fact that the county or state bar activity is prompted by state action. It must be compelled by state direction acting as a sovereign in order to meet the previously recognized exemption. (*Parker v. Brown*, 317 U. S. 341, 63 S. Ct. 307, 87 L. Ed. 315, 1943.) The Court in *Goldfarb* went on to say that the fact that the state bar is a state agency for some purposes does not create an antitrust shield that allows it to foster anticompetitive activities for the benefit of its members. The Court did recognize the existence of a compelling state interest in regulating the practice of the professions and acknowledged that states have a broad power to establish standards for licensing and regulating professional practitioners. At almost the same time the United States Supreme Court handed down its decision in the *Bigelow* case. *Bigelow* was a newspaper editor who published an advertisement in Virginia dealing with abortion services available in New York. At that time, both the advertisement and the abortion services were legal in New York but not in Virginia. *Bigelow* was convicted of a misdemeanor. The Court overturned his conviction and held that commercial advertising is not stripped of First Amendment protection merely because it appears in that form. Thus, commercial speech does enjoy a degree of First Amendment protection. The Court went on to state that "advertising, like all public expression, may be subject to reasonable regulation that serves a legitimate public interest." The Court proposed a balancing test of weighing the First Amendment interest against the alleged governmental interest in deciding such cases. Under those circumstances, the Court felt the First Amendment interest clearly prevailed. (*Bigelow v. Virginia*, 421 U. S. 809, 95 S. Ct. 2222, 44 L. Ed. 2d 600, 1975.)

In 1977, the United States Supreme Court was called upon to decide directly the question of legal advertising in *Bates and Van Osteen v. State Bar of Arizona*, 433 U. S. 350, 97 S. Ct. 2691, 53 L. Ed. 2d 810, 1977. The Court held that the banning of advertising in a newspaper of certain routine legal

services did not violate the Sherman Act since the disciplinary rule prohibiting advertising was a rule of the Supreme Court of Arizona and, as such, was imposed by the state acting in its sovereign capacity. However, the blanket suppression of advertising by attorneys required by the rule violated the free speech clause of the First Amendment and, thus, lawyers may constitutionally advertise routine legal services and their fees. The Court was not persuaded that such restrained professional advertising by lawyers would be misleading. The Court expressly mentioned that the case did not involve in-person solicitation or advertising as to the quality of legal services. In addition, the Court made clear that, although the advertisement at issue was protected, they did *not* hold that advertising by attorneys may not be regulated in any way. By way of example, the Court stated "advertising that is false, deceptive, or misleading of course is subject to restraint." Advertising that is illegal may also be suppressed. As with other varieties of speech, it follows that there may be reasonable restrictions on the time, place, and manner of advertising. Of interest is the fact that the court, in footnote number 20, appears to quote with approval the AMA's Principles of Medical Ethics regarding advertising as an example of another profession permitting its members to make public communications.

Subsequently, the United States Supreme Court has dealt with two other advertising-solicitation cases involving lawyers. The first involved a direct in-person solicitation of the most flagrant nature. An attorney in Ohio, upon learning of an auto accident while at a post office, thereafter went directly to the hospital room of one of the injured parties and, while the patient was lying in traction and apparently in pain, he solicited her representation. He was informed that he should discuss the matter with her parents which he did and during which time he recorded that conversation secretly. He obtained an oral consent during that recorded conversation. Later, apparently that same day, he visited the passenger of his "client" who had also been injured but released from the hospital. Again he used a concealed tape recorder to record the "consent." The Supreme Court of Ohio held that such conduct warranted indefinite suspension and an appeal was taken. The United States Supreme Court affirmed the decision and held that the state did not lose the power to regulate commercial activity merely because speech was a component of the activity, that a lawyer's procurement of remunerative employment is only marginally affected by First Amendment concerns, and that the state bar acting with state

authorization could constitutionally discipline a lawyer for soliciting clients in-person for pecuniary gain under circumstances likely to pose dangers that the state has a right to prevent. The state has a legitimate and indeed compelling interest in preventing those aspects of solicitation that involve fraud, undue influence, intimidation, overreaching, and other forms of vexatious conduct (*Ohralik v. Ohio State Bar Association*, 436 U. S. 447, 98 S. Ct. 1912, 56 L. Ed. 2d 444, 1978.) In the next case an attorney who was a cooperating lawyer with a branch of the American Civil Liberties Union (ACLU), after advising a group of women of their legal rights as a consequence of their having been sterilized as a condition of receiving public medical assistance, informed one of the women present by way of a subsequent letter that free legal assistance was available at the ACLU. The attorney was charged with violating the disciplinary rules of the South Carolina Supreme Court and was sanctioned with a public reprimand. On appeal to the United States Supreme Court, the judgment was reversed. The Court held that solicitation of prospective litigants by a non-profit organization that engages in litigation as a form of political expression and political association constitutes rights entitled to First Amendment protection as to which the government may regulate only with narrow specificity. Consequently, a lawyer pursuing prospective litigants under such conditions as described is not subject to disciplinary action absent other factors such as undue influence, overreaching, misrepresentation, invasion of privacy, etc. (In *re Primus*, 436 U. S. 412, 98 S. Ct. 1893, 56 L. Ed. 2d 417, 1978.) Thus, where other rights come into play — namely political expression and association — the state's right to regulate appears to narrow.

Another recent case of significant interest arose in the State of Illinois, where a chiropractor's license was suspended for 90 days because of advertising in violation of the Illinois Medical Practice Act, sections 16₍₁₃₎ and ₍₄₎. Section 16₍₁₃₎ of the Medical Practice Act prohibited "advertising or soliciting by himself or through another by means of handbills, posters, circulars, stereopticon slides, motion pictures, radio, newspapers, or in any other manner for professional business." Section 16₍₄₎ dealt with engaging in dishonorable, unethical, or unprofessional conduct of a character likely to deceive, defraud, or harm the public. The Illinois Supreme Court concedes that section 16₍₁₃₎ may be overly broad under the *Bates* and *Virginia Citizen's* Cases, and went so far as to suggest that the Illinois General Assembly reconsider the statute in light of current constitu-

tional standards. However, the Court elected to construe the statute judicially in a manner so as to permit them to examine the chiropractor's advertisements under the standards set forth in *Bates* and *Virginia Citizens*. Some of the advertisements used by the chiropractor were as follows:

1. "It's not true to say we are doing everything possible unless chiropractic is included."
2. A picture of a man praying and asking "Why didn't someone tell me about chiropractic sooner?"
3. Some ads offered free chicken, free refreshments, and a free spinal x-ray.
4. Some ads condemned reliance on drugs while extolling the virtues of the drugless chiropractic profession.
5. Advertising circulars were attached to such places as traffic light posts, a traffic light control box, and a United States mailbox.

The Illinois Supreme Court held the advertisements to be uninformative and misleading and not entitled to First Amendment protection within the purview of the *Virginia Citizens* and *Bates* decisions. Furthermore, the Court said the attachment of even *protected* advertisements to traffic light posts and mailboxes would constitute an improper time, place, and manner for the advertising of professional services. (*Talsky v. Department of Registration and Education*, 370 N. E. 2d 173 (1977), Certiorari denied by U. S. Supreme Court ____ U. S. ____, 99 S. Ct. 84, 581 L. Ed. 2d 111 (October, 1978).) The effect of denying certiorari is to allow the Illinois decision to stand as law.

In another recent case, the District Court of Appeal of Florida, Third District, had held that a non-profit corporation performing veterinary medical services (spaying and neutering) could not advertise since licensed doctors of veterinary medicine were prohibited from advertising by Florida statutes. (*Society for Welfare of Animals v. Walrath*, 343 S2d 934, 1977.) On appeal the United States Supreme Court vacated the judgment and remanded the case to the District Court of Appeal of Florida, Third District, for further consideration in light of *Bates*. (____ U. S. ____, 99 S. Ct. 68, 58 L. Ed. 2d 102, October, 1978.)

From the above it is apparent that at least restrained professional advertising is entitled to First Amendment protection. The state can no longer ban professional advertising absolutely but does retain substantial power to regulate it. The state can suppress illegal transactions and can restrain or prevent false, deceptive, and misleading advertisements. It is also proper to regulate the time, place, and manner of such transactions. Situations involving in-person

solicitation can be more highly regulated since here there is a significant chance of public harm by way of undue influence, overreaching, fraud, intimidation, and other forms of vexatious conduct. Hence, some guideposts are now available for developing statutory schemes for dealing with regulation of professional advertising.

Statutes and Administrative Regulations

By way of example, the appropriate Kansas statutes and regulations will be reviewed. The two healing arts statutes relevant to this paper are Kansas Statutes Annotated (K.S.A.) 65-2836 dealing with suspension, revocation or limitation of licenses, and K.S.A. 65-2837, which defines unprofessional conduct.

In regard to professional advertising the relevant portions of K.S.A. 65-2836 are:

(b) Immoral, unprofessional or dishonorable conduct or professional incompetency; (d) Use of untruthful or improbable statements or flamboyant, exaggerated or extravagant claims in advertising concerning such licensee's professional excellence or abilities; (e) Use and distribution of literature advertising professional abilities; and (f) Other unethical advertising practice.

K.S.A. 65-2837 defines unprofessional conduct as any of the following with reference to advertising:

(a) Solicitation of professional patronage or profiting by the acts of those representing themselves to be agents of the licensee; (g) Making use of any advertising statements of a character tending to deceive or mislead the public; (h) Advertising professional superiority or the performance of professional services in a superior manner; (i) Advertising prices for professional service; posting of fees as required by law shall not be deemed advertising; (j) Advertising by means of a large display, lights, signs, or containing as a part thereof the representation of any portion of the human body; (k) Employing or making use of advertising solicitors or free public press agents; (l) Advertising any free professional services or free examination; (m) Offering discounts or inducements to prospective patients by means of coupons or otherwise to perform professional services during the given period of time or during any period of time for a lesser or more attractive price; (n) Advertising to guarantee any professional service or to perform any operation painlessly; (o) Individually advertising any price or prices of corrective devices or services.

The relevant administrative regulation of the Board of Healing Arts is Kansas Administrative Regulation (K.A.R.) 100-18-1 Advertising:

It is unethical and unprofessional for a licensee in any branch of the healing arts to solicit professional employment by word of mouth, by letters, circulars, pamphlets, newspapers, magazines, telephone books, radio, television, billboards, sign boards, hand bills, placards, posters, touters, solicitors, or any other form of advertising or by communication or interviews not warranted by personal relations.

It is unethical and unprofessional for a licensee in any branch of the healing arts to solicit professional employment by any indirect advertisement employing any of the foregoing methods of advertising or by furnishing or inspiring magazine, newspaper, radio or television comments, or procuring one's photographs to be used or published in connection with treatment of cases or persons.

The customary use of simple professional cards is proper.

In cities and towns where it is customary for the local newspapers to carry a professional directory or register, a licensee may carry a listing which sets forth:

1. His name.
2. The name or initials designating the branch of the healing arts in which he is licensed.
3. Address.
4. Telephone number.
5. If the licensee engages in a professionally recognized specialty, then the listing may carry the designation of such professionally recognized specialty.

Listings may be carried in the yellow pages of telephone directories which set forth the licensee's name, address and telephone number, and such listing may be under a heading designating a professionally recognized specialty.

It is unethical and unprofessional for any person licensed in any branch of the healing arts to use any type of advertising herein-before referred to which solicits patronage ostensibly for another purpose, which other purpose is to be conducted or carried out at the office, address or telephone number where the licensee maintains his office and telephone for the practice of the branch of the healing arts in which he is licensed.

Any person licensed to practice any branch of the healing arts in the state of Kansas knowingly violating any of the foregoing provisions of this article may be subjected to appropriate disciplinary action by the Kansas State Board of Healing Arts, which action may include suspension or revocation of license. (Authorized by K.S.A. 65-2865; effective Jan. 1, 1966; amended Jan. 1, 1970; amended Jan. 1, 1973; amended Feb. 15, 1977.)

The legality of the above statutes and regulation would appear to vary on a section-by-section basis assuming that unlawful sections can be severed without destroying the whole. Those that appear vulnerable to challenge include K.S.A. 65-2836 (f) Other unethical advertising practices; K.S.A. 65-2837; (i) Advertising prices for professional services; and (o) Individually advertising any price or prices of corrective devices or services. These sections either preclude advertising routine prices or, in the case of K.S.A. 65-2836 (f), it is unnecessarily overbroad if one defines unethical practice as given in K.A.R. 100-18-1. The regulation uses the words "solicit professional employment," but its effect is to preclude even informational advertising in other than professional cards, professional directories or registers, and telephone directories.

Because the statutes and regulation represent the State acting as a sovereign, they should be free of any antitrust attack under the Sherman Act. Those sections of the statute not mentioned as vulnerable appear to comport with current constitutional standards.

Of interest to all professionals in Kansas is the adoption on February 28, 1979, by the Supreme Court of Kansas of new disciplinary rules regarding professional legal advertising. Rule 225 of the rules for Discipline of Attorneys, subsections DR 2-101, DR 2-102, DR 2-103, DR 2-104, and DR 2-105. The rules preclude an attorney from making public communications containing a false, fraudulent, misleading, deceptive, self-laudatory, or unfair statement or claim. A lawyer may publish or broadcast information, subject to limitations contained in DR 2-103, in print media regularly published and distributed or over radio or television broadcast in the geographic area or areas in which the lawyer resides or maintains offices, or in which a significant part of the lawyer's clientele resides, and may publish advertisements in telephone directories and reputable law lists and legal directories. The information must be presented in a dignified manner without the use of drawings, illustrations, animations, portrayals, dramatizations, slogans, music, lyrics, or the use of pictures other than a portrait of the individual lawyer. A list of what may be published or broadcast is given in substantial detail [twenty-five separate items are listed under DR 2-101_(B)]. If the information is broadcast it shall be pre-recorded, approved for broadcast by the lawyer or law firm, and a recording of the actual transmission shall be retained by the lawyer. The information that one may publish or broadcast includes identifying data, field or fields of law in which one practices (but one can not hold

one's self out as a specialist except in patent law), licensing, education, legal teaching positions, legal authorships, positions held in bar associations, foreign language abilities, bank references, credit arrangements, office and answering service hours, and fee information with some restrictions. Some information may only be published in a reputable law list, *e.g.*, public or quasi-public offices held, membership in legal fraternities or legal societies, and, with written consent, the name of clients regularly represented.

This set of rules applicable to lawyers should be of value to other professions as an example of what the Supreme Court of Kansas believes to comport with current constitutional standards regarding professional legal advertising. Although no two professions are identical in terms of the nature and extent of the State's interest, it would seem that in many areas one could analogize as to what is protected by the First Amendment and what is not and hence could be restrained or suppressed.

The Federal Trade Commission

In 1975, the Federal Trade Commission (FTC) commenced an investigation into four major health related areas: (1) The AMA policy on physician advertising; (2) Control of health-provider supply; (3) Fee-for-service physicians as inhibitors of Health Maintenance Organizations; and (4) The relative value scale as a form of collusive fee setting.

After a lengthy investigation, Administrative Law Judge Ernest G. Barnes issued his initial decision and order on November 13, 1978. (*United States of America Before the Federal Trade Commission, In The Matter of the American Medical Association, a Corporation, The Connecticut State Medical Society, a Corporation, The New Haven County Medical Association, Inc. Docket No. 9064.*) The Administrative Law Judge found that the respondents have conspired, combined, and agreed to adopt, disseminate, and enforce ethical standards that ban physician solicitation of business, severely restrict physician advertising, and prohibit certain contractual arrangements between physicians and health care delivery organizations, and between physicians and non-physicians. These acts and practices, Barnes concluded, constitute unfair methods of competition and unfair acts or practices in violation of Section 5 of the FTC Act. The decision held that the result of the challenged practices has been the placement of a formidable impediment to competition in the delivery of health care services by physicians in this country. That barrier has served to deprive consumers of the free flow of information about the

availability of health care services, to deter the offering of innovative forms of health care, and to stifle the use of almost every type of health care delivery that could potentially pose a threat to the income of the fee-for-service physicians in private practice. The costs to the public in terms of less expensive or even perhaps more improved forms of medical services is great.

The recommended order, if adopted by the full commission, would require that respondents: (1) cease and desist from engaging in the challenged practices; (2) revoke and rescind any existing ethical principles or guidelines that restrict physicians' advertising, solicitation, or contractual relations; (3) provide adequate notification to the members and affiliated societies of the terms of the order; and (4) deny affiliation to any society that engages in any practices that violate the terms of the order.

The order would permit respondents, beginning two years after the order becomes final, to issue ethical guidelines affecting advertising and solicitation after permission and approval of the FTC.

The medical profession's reaction to the FTC investigation has been one of dismay and anger. There is difficulty in making a logical connection between the *Goldfarb* case, that is, price fixing in the legal profession, and matters of medical quality control, medical school accreditation, health maintenance organizations, health education, health manpower, and specialty certification. (Avellone and Moore, *The Federal Trade Commission Enters a New Arena: Health Services*, 299 *New England Journal of Medicine* 478, August 1978.) Most physicians do not believe that the cost of health care can be significantly impacted by the intense competition that the FTC appears to advocate by way of liberal advertising and solicitation. Such a simplistic view fails to take into account that physician fees amount to only about 20 per cent of total health care costs. (Somers, *Health Care* 1976, 84 *Annals of Internal Medicine* 211, February, 1976.) The FTC appears to assume that cost inflation in medicine is due to the anticompetitive behavior of physicians, as expressed through medical school accreditation, specialty board examination and certification, bans on advertising and soliciting, and the establishment of fee schedules by a relative value system. In all of these areas the FTC appears not to appreciate the principal purpose of the medical profession's efforts to abate quackery, to monitor medical education, to establish competence standards for practitioners, and by relative value scales to protect the public from irresponsible fee inflation. Many physicians have criticized the FTC

for not seeking medical consultation in their investigation. That posture undoubtedly reflects a failure of physicians to appreciate the nature of the adversary process. Physicians must hope that the AMA and its component societies will present medicine's point of view intelligently, accurately and, in an adversary setting, persuasively. Some believe that the medical profession must make a choice between the infusion of market pressures (*i.e.*, the FTC position) and sweeping federal regulation (*i.e.*, socialized medicine). (Lawrence, *Federal Trade Commission Sets About Reducing Costs of "The Health Care Industry," 2 Forum on Medicine* 12, January, 1979.)

Conclusions

The medical profession must come to grips with the fact that advertising and solicitation may be lawful even though undesirable and distasteful from a purely ethical point of view. The United States Supreme Court has made clear that commercial speech is entitled to a degree of protection by the First Amendment applicable to the states via the Fourteenth Amendment. It is also equally clear that the states have a legitimate and even compelling interest in regulating the professions in order to protect the public. However, the regulation must be reasonable and comport with current constitutional standards. In the area of professional advertising and solicitation there is no well defined range of reasonableness around which one can draw bright lines. Nevertheless, there are now several guideposts upon which to base regulation and behavior. It is clear that one can constitutionally suppress illegal transactions and restrain those that are false, deceptive, misleading, fraudulent, self-laudatory, or an unjustified statement or claim. It is also proper to control the time, place, and manner of the communication. It appears advisable to avoid the terms advertisement and solicitation, and deal with both of these endeavors under the generic name of a public communication. Thus, the task is to ascertain what public communications are within the bounds of the law and then hopefully require them to be presented in a style that is relatively unoffensive to the profession and not harmful to the public. It is a formidable undertaking. Any regulatory scheme regarding professional medical public communications should be by statutory enactment so as to directly involve the state acting as a sovereign in order to exempt it from antitrust action. The time has come for responsible leaders of the medical profession, with legal counsel, to engage in work with the State Legislature to generate such a product.

EDS Federal

The Kansas Medicaid Fiscal Agent

ON JULY 1, 1978, the Kansas Medicaid Program made a transition to a new fiscal agent. When EDS Federal (EDSF) was established, the term "Federal" was selected for the title because much of the activity of the company derived either directly or indirectly from contracts involving the administration of federal programs. EDSF is a wholly owned subsidiary of Electronic Data Systems of Dallas, Texas. The foundation of EDS is the intelligent use of computers in industry. During the years since its founding in 1962, EDS has branched into numerous fields of business, including health insurance, life insurance, banking, and manufacturing. EDSF has considerable experience in the administration of Medicaid programs nationwide.

Background

The Kansas Medicaid (Medical Assistance) program was put out to competitive bid in late 1977, and the contract was awarded to EDSF in February 1978. Five months were devoted to very detailed program review and preparations. Eight workshops for physicians and their office assistants were conducted during June 1978, with over 1,000 persons attending. Provider manuals were prepared and distributed during the implementation period.

On July 1, 1978, the EDSF office (4123 Gage Center Drive, Topeka, 66604) officially opened and claim processing began.

Claims Processing at EDS Federal

The claims processing system installed by EDSF for Kansas is a significant departure from the previous system. It affords the State of Kansas additional flexibility in the provision of benefits to Kansas Medicaid recipients and reimbursements to the providers of service.

As with all other claims processing operations, the beginning is the mailroom. EDSF is fortunate in that its office is adjacent to the Gage Center Post Office, affording numerous mail deliveries daily. Physician claims are received and batched daily. The use of a separate post office box ensures that the sorting and batching process is completed rapidly. Claims control is established immediately upon receipt through the use of a unique Internal Control Number (ICN) which is stamped on each document, with a microfilm picture made of each claim.

The next step is "exam entry." Highly skilled medical claims examiners review each claim and enter the appropriate information into the data processing system. There are numerous items that must be keyed for each claim before processing begins.

The use of the computer now comes into play. Each claim is reviewed by the computer. Among the more common questions that the computer asks about each claim are:

1. Was the patient an eligible recipient at the time Medicaid (Medical Assistance) services were rendered?
2. Is the physician enrolled and participating in the program?
3. Is the service a covered benefit? Does it require prior authorization?
4. How much should be reimbursed for the service?

The list includes over 400 specific questions about each claim. Many of the claims review questions derived from program benefit limitations specified by SRS.

Next, exceptions are identified by the computer for "resolution examiners" to review. When the computer has identified a possible problem, the examiners again look at the claim. Specific instructions are followed by these examiners. At this point there are frequent questions that need to be reviewed by a physician. EDSF has retained, on a part-time basis, a physician-consultant who is currently in practice in Topeka. The consultant gives direction as to the final adjudication of the claim.

Checks and Reimbursement

Medicaid reimbursement is determined by SRS. Twice a month, around the 15th and 30th, EDSF prepares a pay tape which is sent to SRS. This tape contains all claims for which processing was completed during the preceding two-week period. Approximately four working days after receipt of the pay tape, SRS gives state warrants to EDSF who then matches them with the remittance advice and mails the entire packet to the provider of service. Warrants are mailed approximately on the 5th and 22nd of each month to the providers.

(Continued on page 455)

Ka M P A C
KANSAS MEDICAL POLITICAL ACTION COMMITTEE

1300 TOPEKA AVE.



TOPEKA, KANSAS 66612

Dear Doctor:

The federal government plays an ever-increasing role in our lives. As one looks at its priority list, distortion is obvious.

First on this list is self-interest — increasing the size, power, and financial status of the bureaucracy. Next is rewarding the special interest groups who support the government's self-interest efforts. Last comes public interest. The philosophy of the bureaucracy seems to be that citizens exist to serve the federal government.

The medical profession has been made a scapegoat by the government to set up a smokescreen issue so that it will not have to deal with its internal problems — fraud, theft, waste, corruption, and deficit spending.

KaMPAC is interested in helping to change the philosophy of the federal government so that it feels it exists to serve the public. KaMPAC also works to reestablish personal freedom and the free enterprise system where the medical profession can continue to serve Americans well.

To be effective, KaMPAC needs your membership support.

Sincerely,
Ronald Davis, M.D.
Chairman

LOOK
FOR THIS
IN YOUR MAILBOX

DISTINGUISHED FACULTY

CHARLES A. BERRY, M.D., M.P.H.

MODERN PREVENTIVE MEDICINE

Major contributor to the advancement of aerospace medicine as former chief of U.S. Aerospace Medicine Programs including Mercury, Gemini, Apollo, and Skylab. Responsible for man's adaptability to space flight and readaptability to earth's gravity.

DENIS P. BURKITT, M.D.

THE IMPORTANCE OF HIGH FIBER/UPDATE 1979

Noted international medical lecturer. First described a unique lymphoma bearing his name. Continues his geographic pathology studies at St. Thomas' Hospital Medical School; London, England.

ROBERT L. BURNS, D.D.S., M.S.D.

THE ROLE OF THE DENTIST IN TOTAL HEALTH CARE

Practicing periodontist. Consultant in the area of nutrition and comprehensive diagnosis in biological therapeutics.

LEO P. CAWLEY, M.D.

DEMYSTIFYING MEDICINE

Internationally known immunologist and pathologist. Director of Research and Scientific Director of Laboratories at Wesley Medical Center, Wichita, Kansas. Chief of the Karl T. Wiedemann Institute of Clinical Immunology at Wesley Medical Center.

MOSHE FELDENKRAIS, Ph.D.

THE FELDENKRAIS TECHNIQUE

Septuagenarian Israeli physicist who believes that the whole secret of body-mind health lies in how people move. Lecture at the University of Tel Aviv. Author of "Awareness Through Movement."

GERALD L. LOONEY, M.D., M.P.H.

NEURAL FACTORS IN HEALTH AND DISEASE

Assistant professor — University of Southern California Medical School, Director of Emergency Medicine at Glendale Adventist Medical Center.

ARLENE M. PUTT, R.N., Ed.D.

LOW AROUSAL MECHANISM AS A NURSING THERAPY IN STRESS-RELATED DISORDERS

Professor of medical surgical nursing at the University of Arizona. Involved in biofeedback research. Author of "General Systems Theory Applied to Nursing."

DEANE H. SHAPIRO, JR., Ph.D.

SELF-CONTROL: EAST AND WEST: AN OVERVIEW

President of the Institute for the Advancement of Human Behavior, Dean of Academic Affairs at the Pacific Graduate School of Psychology, Clinical Instructor at Stanford University Medical School. He has lectured widely on meditation and self-control and authored "Precision Nirvana."

LONDON H. SMITH, M.D.

THE RELATIONSHIP OF BEHAVIOR AND DIET

Nationally known pediatrician, author of "Improving Your Child's Behavior Chemistry" and "Feed Your Kids Right."

CATHERINE E. SPEARS, M.D.

NEUROLOGICAL DIAGNOSIS AND TREATMENT OF SPASTICITY AND PAIN

Neuro-pediatrician. Pioneer in providing services for handicapped children in the State of New Jersey. Most noted for her work with cerebral palsied children.

ROBERT L. SWEARINGEN, M.D.

HEALTH CARE — A WAY OF BELIEVING

Orthopedist in Evergreen, Colorado. Through his work with ski injuries he discovered important variables which affect the rate of healing in traumatic fractures.

GEORGE Z. WILLIAMS, M.D., D.Sc.

PREVENTIVE MAINTENANCE OF THE HEALTH OF INDUSTRIAL MANPOWER

Chief Executive Officer of the Institute of Health Research. Sixteen years as Director of Laboratories at NIH. Founding Fellow of College of American Pathologists.

V-Cillin K[®]

penicillin V potassium

is the most
widely prescribed
brand of oral penicillin



Tablets
125, 250, and 500 mg*
Oral Solution
125 and 250 mg*/5 ml

V-Cillin K[®] penicillin V potassium

Description: V-Cillin K is the potassium salt of penicillin V. This chemically improved form combines acid stability with immediate solubility and rapid absorption.

Indications: For the treatment of mild to moderately severe pneumococcal respiratory tract infections and mild staphylococcal skin and soft-tissue infections that are sensitive to penicillin G. See the package literature for other indications.

Contraindication: Previous hypersensitivity to penicillin.

Warnings: Serious, occasionally fatal, anaphylactoid reactions have been reported. Some patients with penicillin hypersensitivity have had severe reactions to a cephalosporin; inquire about penicillin, cephalosporin, or other allergies

before treatment. If an allergic reaction occurs, discontinue the drug and treat with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

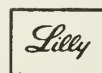
Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin.

(102175)

*Equivalent to penicillin V.

Additional information available to the profession on request.



Eli Lilly and Company
Indianapolis, Indiana 46206

900416

HEALTH INFORMATION ACCESS

Extended biomedical library services are available to all Kansas Health Personnel who have limited or no library facilities.

For:

- . . . Prompt medical reference services
- . . . Preparation of bibliographies/computerized literature searches
- . . . Photocopying and mailing of book and journal articles

Dial toll-free: 1-800-332-4193 UKSM Kansas City, KS

There are trained Medical Librarians on duty Monday through Friday from 8 AM to 5 PM to answer your information needs.

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

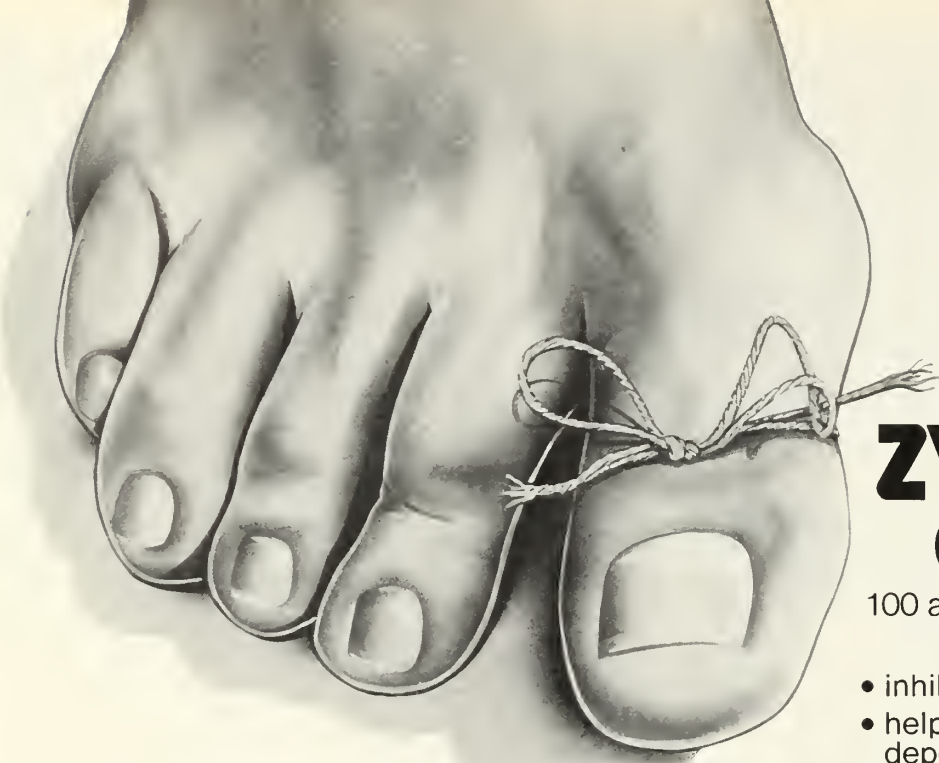
Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

TEST	RESULT	UNIT
GLUCOSE	85.1	mg/dl
BUN	18.4	mg/dl
CREATININE	0.8	mg/dl
ALB	3.8	g/dl
HAEMATOCRIT	42.1	%
HAEMOGLOBIN	13.2	g/dl
PLATELETS	210,000	/mm ³
WBC	12,000	/mm ³
DIFFERENTIAL		
NEUTROPHILS	55	%
LYMPHOCYTES	35	%
MONOCYTES	10	%
EOSINOPHILS	0	%
PLASMA CELLS	0	%
RETICULOCYTES	0	%
SMALLER TESTS		

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

 **THE LATTIMORE-FINK LABORATORIES, INC.**
A DAMON LABORATORY
115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621



A reminder

ZYLOPRIM[®]

(allopurinol)

100 and 300 mg scored Tablets

- inhibits uric acid formation
- helps prevent urate crystal depositions in synovia
- reduces risk of uric acid lithiasis

INDICATIONS AND USE: This is not an innocuous drug and strict attention should be given to the indications for its use. Pending further investigation, its use in other hyperuricemic states is not indicated at this time.

Zyloprim[®] (allopurinol) is intended for:

1. treatment of gout, either primary, or secondary to the hyperuricemia associated with blood dyscrasias and their therapy;
2. treatment of primary or secondary uric acid nephropathy, with or without accompanying symptoms of gout;
3. treatment of patients with recurrent uric acid stone formation;
4. prophylactic treatment to prevent tissue urate deposition, renal calculi, or uric acid nephropathy in patients with leukemias, lymphomas and malignancies who are receiving cancer chemotherapy with its resultant elevating effect on serum uric acid levels.

CONTRAINDICATIONS: Use in children with the exception of those with hyperuricemia secondary to malignancy. The drug should not be employed in nursing mothers.

Patients who have developed a severe reaction to Zyloprim should not be restarted on the drug.

WARNINGS: ZYLOPRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. In some instances a skin rash may be followed by more severe hypersensitivity reactions such as exfoliative, urticarial and purpuric lesions as well as Stevens-Johnson syndrome (erythema multiforme) and very rarely a generalized vasculitis which may lead to irreversible hepatotoxicity and death.

A few cases of reversible clinical hepatotoxicity have been noted and in some patients asymptomatic rises in serum alkaline phosphatase or serum transaminase have been observed. Accordingly, periodic liver function tests should be performed during the early stages of therapy, particularly in patients with pre-existing liver disease. Patients should be alerted to the need for due precautions when engaging in activities where alertness is mandatory.

Nevertheless, iron salts should not be given simultaneously with Zyloprim. This drug should not be administered to immediate relatives of patients with idiopathic hemochromatosis.

In patients receiving Purinethol[®] (mercaptopurine) or Imuran[®] (azathioprine), the concomitant administration of 300-600 mg of Zyloprim per day will require a reduction in dose to approximately one-third to one-fourth of the usual dose of mercaptopurine or azathioprine. Subsequent adjustment of doses of Purinethol or Imuran should be made on the basis of therapeutic response and any toxic effects.

Usage in Pregnancy and Women of Childbearing Age: Zyloprim[®] (allopurinol) should be used in pregnant women or women of childbearing age only if the potential benefits to the patient are weighed against the possible risk to the fetus.

PRECAUTIONS: Some investigators have reported an increase in acute attacks of gout during the early stages of allopurinol administration, even when normal or sub-normal serum uric acid levels have been attained.

It has been reported that allopurinol prolongs the half-life of the anticoagulant, dicumarol. This interaction should be kept in mind when allopurinol is given to patients already on anticoagulant therapy, and the coagulation time should be reassessed.

A fluid intake sufficient to yield a daily urinary output of at least 2 liters and the maintenance of a neutral or, preferably, slightly alkaline urine are desirable to (1) avoid the theoretic possibility of formation of xanthine calculi under the influence of Zyloprim therapy and (2) help prevent renal precipitation of urates in patients receiving concomitant uricosuric agents.

Patients with impaired renal function require less drug and should be carefully observed during the early stages of Zyloprim administration and the drug withdrawn if increased abnormalities in renal function appear.

In patients with severely impaired renal function, or decreased urate clearance, the half-life of oxipurinol in the plasma is greatly prolonged. Therefore, a dose of 100 mg per day or 300 mg twice a week, or perhaps less, may be sufficient to maintain adequate xanthine oxidase inhibition to reduce serum urate levels. Such patients should be treated with the lowest effective dose, in order to minimize side effects.

Mild reticulocytosis has appeared in some patients.

As with all new agents, periodic determination of liver and kidney function and complete blood counts should be performed especially during the first few months of therapy.

ADVERSE REACTIONS:

Dermatologic: Because in some instances skin rash has been followed by severe hypersensitivity reactions, it is recommended that therapy be discontinued at the first sign of rash or other adverse reaction (see WARNINGS). Skin rash, usually maculopapular, is the adverse reaction most commonly reported.

Exfoliative, urticarial and purpuric lesions, Stevens-Johnson syndrome (erythema multiforme) and toxic epidermal necrolysis have also been reported.

A few cases of alopecia with and without accompanying dermatitis have been reported.

In some patients with a rash, restarting Zyloprim (allopurinol) therapy at lower doses has been accomplished without untoward incident.

Gastrointestinal: Nausea, vomiting, diarrhea, and intermittent abdominal pain have been reported.

Vascular: There have been rare instances of a generalized hypersensitivity vasculitis or necrotizing angitis which have led to irreversible hepatotoxicity and death.

Hematopoietic: Agranulocytosis, anemia, aplastic anemia, bone marrow depression, leukopenia, pancytopenia and thrombocytopenia have been reported in patients, most of whom received concomitant drugs with potential for causing these reactions. Zyloprim[®] (allopurinol) has been neither implicated nor excluded as a cause of these reactions.

Neurologic: There have been a few reports of peripheral neuritis occurring while patients were taking Zyloprim. Drowsiness has also been reported in a few patients.

Ophthalmic: There have been a few reports of cataracts found in patients receiving Zyloprim. It is not known if the cataracts predated the Zyloprim therapy. "Toxic" cataracts were reported in one patient who also received an anti-inflammatory agent; again, the time of onset is unknown. In a group of patients followed by Gutman and Yü for up to five years on Zyloprim therapy, no evidence of ophthalmologic effect attributable to Zyloprim was reported.

Drug Idiosyncrasy: Symptoms suggestive of drug idiosyncrasy have been reported in a few patients. This was characterized by fever, chills, leukopenia or leukocytosis, eosinophilia, arthralgias, skin rash, pruritus, nausea and vomiting.

OVERDOSAGE: Massive overdosing, or acute poisoning, by Zyloprim has not been reported.

HOW SUPPLIED: 100 mg (white) scored tablets, bottles of 100 and 1000; 300 mg (peach) scored tablets, bottles of 30, 100 and 500. Unit dose packs for each strength also available.

Complete information available from your local B. W. Co. Representative or from Professional Services Department PML.

U.S. Patent No. 3,624,205 (Use Patent)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



Main Bank/3433 E. Central • Wichita, Kansas 67208
Central Two/First and Hillside • Central Northwest/21st and Amidon
All Locations (316) 686-7111
MEMBER FDIC



Obviously we don't have
branches everywhere.

But we have them
where
they count.



Topeka • KC • Wichita • St. Louis • Tulsa



Auxiliary News

June has been a month of preparation for the happenings of July. At this writing, plans are in the making for our combined summer Board of Directors' meeting and conference. The Board will convene for business in the afternoon of July 12, in Minneapolis, Kansas. That evening, if the current schedule prevails, Governor Carlin as well as State Senators and Representatives from Ottawa and Saline counties will honor us with their presence. We hope to demonstrate to our elected public officials our interest in legislation, and at the same time provide the opportunity to become personally acquainted.

Friday morning, July 13, will be devoted to a seminar on Quality of Family Living. The seminar will be conducted by Mrs. Marjory Mecklenburg, a physician's wife from Edina, Minnesota. Although cost prohibits sending a personal invitation to all members (except via *Communique*), we hope that we will have a good attendance; please urge your spouse to come to Minneapolis — better yet — come with her!

Immediately following our summer meeting, delegates and alternates will prepare for the trip to Chicago, for the AMA Auxiliary Convention. Although the convention does not officially open until Monday, July 23, we will all arrive on the 21st so that we can attend several mini-workshops scheduled for Saturday morning. These promise to be most helpful in the areas of legislation, membership, AMAERF, and health projects. In addition to the president, our delegates are: Jean Crouch, Jean Cavanaugh, Evelyn Huff, Betty Moore; and alternates: Meldon Laury and Twila Flowers.

One big issue at the National this year will be the question of a dues raise. Presently, national dues are \$7; an increase of \$4 effective July 1, 1980, and another \$4/year effective July 1, 1982, is being proposed. Again, your interest and support in this area would be much appreciated.

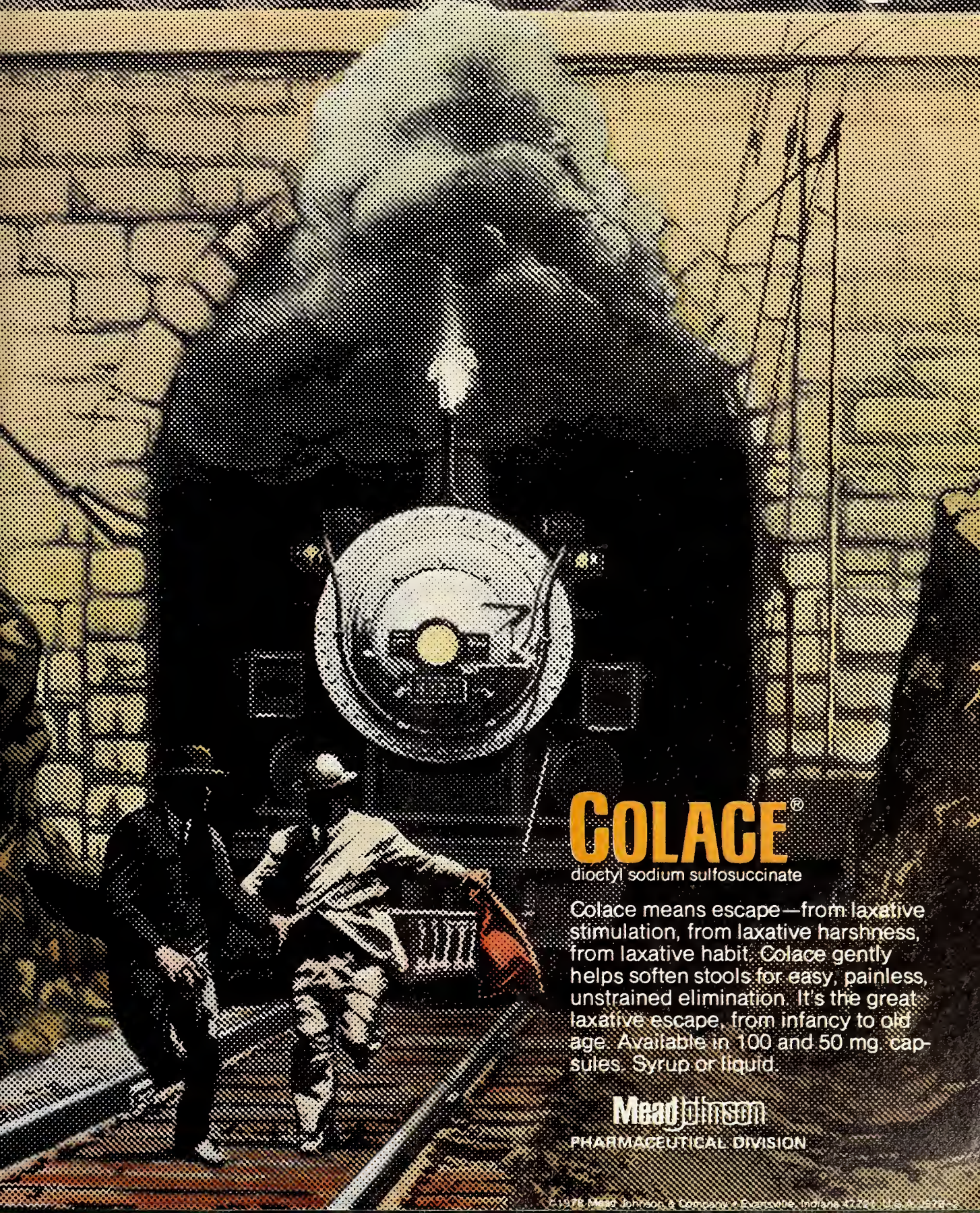
Last month, I introduced you to several of our state chairmanships. Another very important arm of our Auxiliary is the American Medical Association Education Research Foundation (AMAERF). I am sure you are aware that this Foundation is of utmost importance, both as a loan guarantee fund for medical students, and also for unrestricted funds made available to the medical school of your choice. Mrs. Floyd Grillot, of Wichita, is our state chairman for the second year. At the convention in May, she reported the Auxiliary alone had raised \$14,094.93. Barton County received the award for the largest contribution of \$25.62 per capita. Wyandotte County had the largest total contribution of \$2,272.39. The total contribution from Kansas amounted to \$20,649.44, of which \$17,697.51 was presented to UKSM-KC and \$2,951.93 was presented to UKSM-Wichita. These monies are raised through various means of fund-raising, plus 100 per cent contributions.

A very significant means of improving health care is through our committee on International Health Association. This committee is and has been chaired by Mrs. Wilbur Cauble, Wichita, for many years. In fact, Dee has been such an untiring, dedicated individual in her efforts to better the health care of those less fortunate than ourselves, that the Kansas Auxiliary bestowed honorary membership upon her at the state convention this year. Another surprise in store for Dee was the motion that the Auxiliary give \$500 to her committee to be used for activities and projects, the biggest problem being shipping all the drugs, hygiene kits, magazines, etc. to where they are needed.

As time goes on, I shall continue to introduce you to our committees and programs. These people are leaders of your Auxiliary. In getting to know each other better, we can better understand the vital importance that we all play in the area of creating a better image of ourselves in the society in which we live.

Sincerely,
Kathy Wedel
President
Kansas Medical Society Auxiliary

The Great Laxative Escape



COLACE[®]
dioctyl sodium sulfosuccinate

Colace means escape—from laxative stimulation, from laxative harshness, from laxative habit. Colace gently helps soften stools for easy, painless, unstrained elimination. It's the great laxative escape, from infancy to old age. Available in 100 and 50 mg. capsules. Syrup or liquid.

Mead Johnson
PHARMACEUTICAL DIVISION

COMPATIBILITY



Eastern Tiger Swallowtail Butterfly
(*Papilio glaucus*)

Does it influence your choice of a peripheral/cerebral vasodilator*?

Vasodilan—compatible with coexisting diseases (e.g., glaucoma, diabetes)

Vasodilan has not been reported to affect the course of coexisting disease; it has not been reported to affect blood sugar levels or to raise intraocular pressure.

Vasodilan—compatible with concomitant therapy

Vasodilan has not been reported to affect the treatment of coexisting disease; it is compatible with such drugs as hypoglycemics and miotics.

Vasodilan—compatible with your total regimen for vascular insufficiency

Vasodilan can be a valuable adjunct in planning a total therapeutic program for vascular insufficiency.

***Indications:** Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, the FDA has classified the indications as follows:

Possibly Effective:

1. For the relief of symptoms associated with cerebral vascular insufficiency.
2. In peripheral vascular disease of arteriosclerosis obliterans, thromboangitis obliterans (Buerger's Disease) and Raynaud's disease.

Final classification of the less-than-effective indications requires further investigation.

Composition: Vasodilan tablets, isoxsuprine HCl, 10 mg. and 20 mg. Vasodilan injection, isoxsuprine HCl, 5 mg., per ml.

Dosage and Administration: Oral: 10 to 20 mg., three or four times daily. Intramuscular: 5 to 10 mg. (1 or 2 ml.) two or three times daily. Intramuscular administration may be used initially in severe or acute conditions.

Contraindications and Cautions: There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding.

Parenteral administration is not recommended in the presence of hypotension or tachycardia.

Intravenous administration should not be given because of increased likelihood of side effects.

Adverse Reactions: On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.

Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.

Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.

Supplied: Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose; Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose; Injection, 10 mg. per 2 ml. ampul, box of six 2 ml. ampuls.

U.S. Pat. No. 3,056,836



VASODILAN[®] 20-mg tablets

(ISOXSUPRINE HCl)

20 mg q.i.d. recommended dosage

MeadJohnson

PHARMACEUTICAL DIVISION

© 1978 MEAD JOHNSON & COMPANY • EVANSVILLE, INDIANA 47721 U.S.A. M.J.L. 7-4237R

This asthmatic isn't worried about his next breath...

he's active
he's effectively
maintained on

QUIBRON[®]

Each capsule or tablespoonful (15 ml) liquid contains theophylline (anhydrous) 150 mg and glyceryl guaiacolate (guaifenesin) 90 mg

- theophylline for effective around-the-clock bronchodilator therapy
- 100% free theophylline

Indications: For the symptomatic relief of bronchospastic conditions such as bronchial asthma, chronic bronchitis, and pulmonary emphysema.

Warnings: Do not administer more frequently than every 6 hours, or within 12 hours after rectal dose of any preparation containing theophylline or aminophylline. Do not give other compounds containing xanthine derivatives concurrently.

Precautions: Use with caution in patients with cardiac disease, hepatic or renal impairment. Concurrent administration with certain antibiotics, i.e., clindamycin, erythromycin, troleandomycin, may result in higher serum levels of theophylline. Plasma prothrombin and factor V may increase, but any clinical effect is likely to be small. Metabolites of guaifenesin may contribute to increased urinary 5-hydroxyindoleacetic acid readings, when determined with nitrosonaphthal reagent. Safe use in pregnancy has not been established. Use in case of pregnancy only when clearly needed.

Adverse Reactions: Theophylline may exert some stimulating effect on the central nervous system. Its administration may cause local irritation of the gastric mucosa, with possible gastric discomfort, nausea, and vomiting. The frequency of adverse reactions is related to the serum theophylline level and is not usually a problem at serum theophylline levels below 20 mcg/ml.

How Supplied: Capsules in bottles of 100 and 1000 and unit-dose packs of 100. Liquid in bottles of 1 pint and 1 gallon.

See package insert for complete prescribing information.

Mead Johnson

PHARMACEUTICAL DIVISION

© 1979 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. MJL 6-4220R4

The Kansas Medical Society — 1979-1980

OFFICERS

President	Donald D. Goering, Coldwater
Immediate Past President	Warren E. Meyer, Wichita
President-Elect	Phillip A. Godwin, Lawrence
First Vice President	Herman W. Hiesterman, Quinter
Second Vice President	Kermit G. Wedel, Minneapolis
Secretary	Jack R. Cooper, Shawnee Mission
Treasurer	William K. Walker, Sedan
A.M.A. Delegate	Clair C. Conard, Dodge City
A.M.A. Delegate	Alex Scott, Junction City
A.M.A. Alternate	Lew W. Purinton, Wichita
A.M.A. Alternate	Kermit G. Wedel, Minneapolis
Chairman of Editorial Board	David E. Gray, Topeka

COUNCILORS

District 1	Roger D. Warren, Hanover
District 2	Lewis M. Culp, Kansas City
District 3	Lewis G. Allen, Jr., Shawnee Mission
District 4	Kent J. Cooper, Pittsburg
District 5	Kenneth M. Boese, Manhattan
District 6	Millard C. Spencer, Topeka
District 7	Marvin Snowbarger, Emporia
District 8	Steven J. Smith, Arkansas City
District 9	Herbert D. Doubek, Belleville
District 10	Herbert Fransen, Newton
District 11	Ivan E. Rhodes, Wichita
District 12	Philip J. Antrim, Anthony
District 13	Wallace N. Weber, Hays
District 14	Donald E. Beahm, Great Bend
District 15	Richard L. Brownrigg, Dodge City
District 16	Floyd L. Smith, Jr., Colby
District 17	Max E. Teare, Garden City
District 18	Robert W. Hughes, Lawrence
District 19	Robert F. Moore, Caney

OFFICERS OF COMPONENT SOCIETIES — 1980

Society

President

Secretary

Allen	George F. DeTar, Iola	Eugene Myers, Iola
Anderson	Thomas M. Dougherty, Garnett	C. B. Harris, Garnett
Atchison	A. K. Tayiem, Atchison	Robert E. Fast, Atchison
Barton	Robert Polson, Great Bend	Perry Schuetz, Great Bend
Bourbon	James J. Burke, Fort Scott	Douglas P. Weddle, Fort Scott
Butler-Greenwood	Louis S. Morgan, Wichita	N. H. Overholser, El Dorado
Central Kansas	Robert Cox, Hays	John F. Richards, Phillipsburg
Cherokee	R. M. Chubb, Baxter Springs	Orville A. Mehaffy, Baxter Springs
Clay	Richard H. O'Donnell, Clay Center	Dennis Richards, Clay Center
Cloud	Paul Nelson, Concordia	James Moore, Concordia
Cowley	William H. Farrar, Arkansas City	Jerry Old, Arkansas City
Crawford	Harold James Armstrong, Pittsburg	F. A. Tweet, Pittsburg
Dickinson	Don H. Berkley, Abilene	C. R. Svoboda, Chapman
Douglas	Donald W. Hatton, Lawrence	Michael A. Well, Lawrence
Edwards	W. L. McKim, Kinsley	M. D. Atwood, Kinsley
Flint Hills	James N. Glenn, Emporia	W. Scott Ryan, Emporia
Ford	Howell D. Johnson, Dodge City	M. Amawi, Dodge City
Franklin	R. E. Sutton, Ottawa	Stephen Saylor, Ottawa
Geary	Gary A. Copeland, Junction City	Charles S. Bollman, Junction City
Harvey	Milton A. Claasen, Newton	Wendell J. Wiens, Newton
Iroquois	J. R. Bradley, Greensburg	D. H. Donahoe, Meade
Jackson	J. C. Seeley, Holton	M. R. Moser, Holton
Jefferson	R. R. Snook, McLouth	R. C. Keys, Sr., Winchester
Johnson	William R. Brown, Shawnee Mission	James M. Muehlberger, Shawnee Mission
Labette	M. K. Borklund, Parsons	Daniel Pauls, Parsons
Leavenworth	Carroll D. Voorhees, Leavenworth	M. Zia Anwar, Leavenworth
McPherson	V. C. Price, McPherson	Weir Pierson, McPherson
Marion	James Canellos, Goessel	R. G. Franz, Hillsboro
Miami	R. E. Banks, Paola	J. G. Rowlett, Paola
Mitchell	Martin B. Klenda, Beloit	Carl W. Plowman, Jewell
Northeast Kansas	Gary Sinning, Hiawatha	Tom A. Montgomery, Sabetha
Northwest Kansas	John R. Neuenschwander, Hoxie	George D. Marshall, Colby
Pawnee	Ole R. Cram, Larned	Thomas D. Ewing, Larned
Pottawatomie	Tom Dechairo, Westmoreland	Tom Walsh, Onaga
Pratt-Kingman	T. L. Waylan, Nashville	Cyril V. Black, Pratt
Reno	James W. Shaw, Jr., Hutchinson	F. L. Depenbusch, Hutchinson
Republic	Duane L. Scott, Belleville	James A. Ward, Belleville
Rice	Curtis V. Wolf, Lyons	Richard A. Siemens, Lyons
Riley	William H. Tiemann, Manhattan	Frank C. Lyons, Manhattan
Saline	David A. Lasley, Salina	C. N. Waters, Salina
Sedgwick	R. L. Cummings, Wichita	Jack Moseley, Wichita
Seward	Jess W. Koons, Liberal	Jack D. Reese, Liberal
Shawnee	Dan Kelly, Topeka	Stuart C. Averill, Topeka
South Central Tri-County	Walter Forred, Harper	Jerry Hall, Anthony
Southeast Kansas	Don White, Coffeyville	Bob Haskins, Chanute
Southwest Kansas	Myron J. Zeller, Garden City	John Gilbert, Garden City
Stafford	R. P. Quackenbush, St. John	C. Everett Brown, Stafford
Wyandotte	Barbara P. Lukert, Kansas City	Michael D. Boggan, Kansas City

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

IN KANSAS

YOUR INDEPENDENT AUTHORIZED DEALERS ARE:

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Emporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street • Chicago, Illinois 60646

An American Company

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

EDS Federal

(Continued from page 445)

Communications

EDSF maintains a communications unit to answer provider inquiries, both via telephone and letter. The communications unit strives to answer all letters within two working days and to provide immediate answers to telephone inquiries or call back when the answer requires research.

Prior Authorization

Services requiring prior authorization are forwarded to EDSF who then stages them to be reviewed by the SRS medical consultant. As soon as the prior authorizations are reviewed and approved (usually within five days), a prior authorization number is assigned and the request is returned to the physician. If a prior authorization request is rejected, the doctor may appeal the decision by providing additional information and returning the request to EDSF. The request will then be reconsidered by SRS.

Performance

Each month, EDSF delivers to the Kansas Medical Society a set of charts showing the performance of EDSF on physician claims for the previous month. Most recent data for April 1979 shows the following:

average daily receipts	=	2,574
average daily processed	=	2,595
inventory at month end	=	10,293
average processing time	=	7.6 days

EDSF offers to review the monthly report with individual members of the Kansas Medical Society who may be interested in it.

EDSF staff would appreciate the opportunity of attending various meetings to meet individual physicians over the state and to become better acquainted with them. Also, EDSF welcomes physician visits to the office to observe Medicaid claims processing.

Buy U.S. Savings Bonds

INDEX TO ADVERTISERS

Arthritis Foundation, Kansas Chapter	402
Beltone Electronics Corporation	454
Biomedical Synergistics Institute, Inc.	447
Burroughs Wellcome Company	450
Capitol Federal Savings & Loan Ass'n.	395
Central Bank & Trust	451
Goetze-Niemer Company	401
P. W. Hanicke Manufacturing Company	456
Lattimore-Fink Laboratories	449
Eli Lilly Company	448
Mead Johnson Pharmaceutical Division	452a, 452b, 452c, 452d
Medical Protective Company	401
Merck Sharp & Dohme	396
Merrell-National Laboratories	396, 396a
Midwest Pension Planners	393
Munns Medical Supply	451
Roche Laboratories	394, 396d, C3, C4
Shared Service Systems	395
Smith Kline & French	396a
The Upjohn Company	396b

CLASSIFIED ADVERTISEMENTS

KANSAS CITY family practice. Lucrative, fully equipped office. Reply to Box 1-1278 in care of the *Journal*.

FOR SALE: Soundsciber equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

GREAT BEND — EMERGENCY MEDICINE PRACTICE available July 1, Mon-Thurs evenings, 5 PM-5 AM. Paid professional liability insurance, excellent specialty back-up, modern hospital, guaranteed annual income, \$50,000. Contact Tom Cooper, M.D., 1-800-325-3982.

USE YOUR MEDICAL LIBRARIES

YOUR LIBRARIAN WILL BE
HAPPY TO ASSIST YOU

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs

Trusses

Abdominal

Supports

Elastic

Hosiery

Foot

Supports

Surgical

Corsets



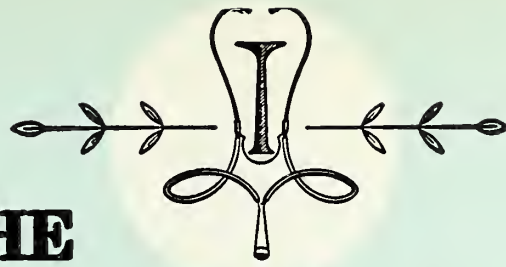
Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

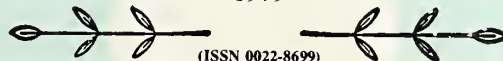
Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612



1979 ROSTER

THE
Journal
OF THE
Kansas
Medical
Society

AUGUST
1979



(ISSN 0022-8699)

VOL. LXXX
NO. VIII

LIBRARY
U.C. SAN FRANCISCO

SEP 10 1979

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for August

Special Issue: 1979 Membership Directory

Advertisers	126
Alphabetical Listing of Membership	68
Autopsy, Performance of	35
Codes:	
Medical Schools	41
Medical Specialties	77
Component Medical Societies: Officers, Councilors	11
Continuing Medical Education	37
Genetic Counseling Centers	20
Good Samaritan Act	34
Hospitals:	
General	15
Home Health Agencies	19
Poison Control Centers	19
State Institutions	18
Veterans and Military	18
Impaired Physician Program Resource List	26
KMS Impaired Physician Program	27
Kansas Law	32
Kansas Medical Society:	
Commissions and Committees	10
Councilors	6
Officers	6
Staff	8
Legal Definition of Death	36
Legislative Contacts	20
Map of County Medical Societies and Council Districts ..	9
Minors, Treatment of	35
Oath of Hippocrates	24
Physician Distribution by Cities	78
Principles of Medical Ethics	31
Professional Organizations	5
Related Organizations	14
Specialty Societies	13

Address all correspondence to the JOURNAL of the KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; **Editorial Assistant:** Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. **POSTMASTER:** Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

WHAT WILL APRIL 15, 1980 COST YOU?

Probably more than you'd like. But planning *now* can help — and we have sensible answers to important questions.

DID YOU KNOW:

1. That by Incorporating your practice you could substantially save tax dollars.
2. **You may not be receiving full benefit from Pension and Profit Sharing/Tax Shelters.**
3. That by having Keogh Plan with higher contribution limits, you can benefit.
4. **You may not be receiving Maximum Tax Savings from Fringe Benefits.**
5. That you can plan more effective ways of reducing your Estate Asset Tax Liability.



JOHN E. LYONS
MIDWEST PENSION PLANNERS

CLIP & RETURN

CLIP & RETURN

John:

Yes, I'm concerned about my **tax position** in 1980 and I'd like more information on:

- ☐ Incorporating my practice
- ☐ **Pension and Profit Sharing/Tax Shelters**
- ☐ Keogh Plans — with higher contribution limits
- ☐ **Fringe Benefit Tax Planning**
- ☐ Estate Asset Tax Liability

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



JOHN E. LYONS
MIDWEST PENSION PLANNERS
Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913-235-5301

A character all its own.



Valium (diazepam/Roche) is a benzodiazepine with a character all its own.

Pharmacologically, it is a potent skeletal muscle relaxant and anticonvulsant (in adjunctive use), as well as an antianxiety agent. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

But the individual character of Valium is even more apparent clinically than pharmacokinetically. And far more significant. That's because of the patient response obtained with Valium. A response which brings a calmer frame of mind. A response which has a pronounced effect on the somatic symptoms of anxiety, particularly muscular tension. A response which helps the patient feel more like himself again because of the way Valium reduces the overwhelming symptoms of anxiety and psychic tension.

Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving, operating dangerous machinery or the simultaneous ingestion of alcohol.

Unquestionably, many psychotherapeutic agents, including other benzodiazepines, have antianxiety effects. But one fact remains: you get a certain kind of patient response with Valium. It's a response you want. A response you know. A response you trust as part of your overall management of anxiety and psychic tension.

Valium® diazepam/Roche

2-mg, 5-mg, 10-mg scored tablets
a prudent choice in psychic
tension and anxiety

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available singly and in trays of 10.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Doctor, here are 100% deductible retirement plans!


You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"



Obviously we don't have
branches everywhere.

But we have them
where
they count.



Topeka • KC • Wichita • St. Louis • Tulsa

When the indications surface...

Net wt 1 oz

Net wt 1/2 oz

Net wt 1/32 oz (approx)



NEOSPORIN[®] Ointment

(Polymyxin B-Bacitracin-Neomycin)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Each gram contains: Aerosporin[®] (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: Therapeutically, (as an adjunct to systemic therapy when indicated), for topical infections, primary or secondary, due to susceptible organisms, as in: infected burns, skin grafts, surgical incisions, otitis externa; primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia); secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis); traumatic lesions, inflamed or suppurating as a result of bacterial infection. Prophylactically, the

ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components. Do not use in the eyes or in the external ear canal if the eardrum is perforated.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control

secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



**The AMA
...working for you**



Imagine...

Little more than a century ago medical practice was groping through darkness. Surgeons limited themselves to simple operations. Many of those who practiced medicine did so without a formal medical education. Diploma mills did a landslide business in competition with the few legitimate medical schools. There was little formal licensing. Since physicians could do little to treat most diseases, people often sought relief from quacks, cultists, and faith healers.

Among the competent and dedicated physicians there was an acute awareness and concern about the state of the public health and the quality of medical care. In 1847, 250 of these physicians met in Philadelphia to form a national association—the American Medical Association—whose purpose remains the same firm commitment today: *to promote the science and art of medicine and the betterment of the public health.*

Protecting Your Rights And Interests

One of the AMA's major functions is to act as the advocate for physicians' rights and for the quality of patient care. Effective representation is critical because of the federal government's mounting pressure for tighter regulation and control of medicine.

Every year, the AMA monitors, analyzes and reports on thousands of pieces of health-related legislation and regulations—at both the federal and state levels. To meet specific legislative needs in the health area, the AMA has drafted its own bills.

AMA officers and trustees frequently testify before Congressional committees and federal agencies. During the 95th Congress, the AMA submitted formal, written testimony or furnished witnesses to testify more than 200 times on bills and regulations affecting health care delivery. And, on several occasions, it has been necessary for the AMA to take the government to court. In fact, the AMA spent over \$1,000,000 in 1978 on legal fees to defend the rights of physicians and patients.

Here are examples of the AMA representing your interests before Congress and governmental agencies:

- The AMA is challenging an FTC administrative judge's initial decision that the AMA cannot establish ethical guidelines on physician advertising and solicitation.
- The AMA is defending three antitrust suits (filed by chiropractors) to preserve medicine's First Amendment rights to speak out on public health issues concerning physicians.
- The AMA worked with hospital groups to defeat the Carter Administration's proposal for rigid cost controls on hospitals which would have adversely affected the quality of care.
- The AMA defeated proposals for federal licensure and re-licensure.

The AMA is also involved in projects to improve rural, inner-city, jail and emergency care; encourage family practice in medicine; curtail TV violence; and the Auxiliary's campaign to promote adequate immunization among the millions of our youngsters.





Your Membership Benefits

AMA membership provides you with a broad range of both professional and personal benefits and services. Among them are:

PUBLICATIONS

Journal of the American Medical Association—To help you keep on top of the latest scientific developments every week.

American Medical News—Provides the latest information on events and personalities affecting the practice of medicine.

Specialty Journals—For specific scientific information in your specialty, you have a choice of one of nine specialty journals.

Members Insurance Programs

AMA insurance programs provide substantial coverage at a cost considerably lower than what you would have to pay on an individual basis. The programs available are: Group Life Insurance, Excess Major Medical, Disability Income Insurance, Supplemental "In Hospital" Insurance, Accidental Death and Dismemberment Plan, and Office Overhead Expense Insurance.

Seminars

Negotiations—Designed to help physicians develop and improve their negotiating skills.

Practice Management—Provides proven guidelines for effective and productive management of the physician's practice. Includes physical plant, personnel, procedures, and patient relations.

Speakers Training—Instructs physicians in the methods and techniques of effective public speaking.

Additional Membership Benefits

- The nation's largest physician placement service.
- CME programs—expanded and regionalized to make continuing medical education more convenient and less expensive.
- The research resources of one of the nation's most up-to-date medical libraries.



The AMA — The Standard-Bearer Of Excellence

Since its inception, the AMA has provided the leadership which has led to the excellence of medical education and the high quality of medical care in this country. No other single organization has assumed such major responsibility for the establishment and maintenance of these standards of excellence.

The AMA participates jointly with other organizations to ensure high quality in both medical education and health care delivery. This is accomplished through the accreditation of medical schools, hospitals, residency training programs, allied health professions training programs, and institutions offering continuing medical education.

Physicians can be secure in the knowledge that hospitals, and allied health professionals have been subjected to stringent training and qualifying standards. If the AMA did nothing more than serve as guardian of the educational standards of the profession, it would deserve the support of all physicians.

Where Your Dues Dollars Go

Represent the Medical Profession: 14% – To represent and serve as an advocate for the medical profession in its relations with state and federal legislative bodies and regulatory agencies. Also includes development of public relations and negotiations programs, and communications with the profession.

Strengthen Organized Medicine: 11% – Membership development, membership benefits and services, improved relations with and services to medical and specialty societies.

Assure and Continue to Improve the Quality of Medical Care: 18% – Accreditation of undergraduate and graduate medical education, development of continuing medical education programs, certification of physician credentials, and evaluation of the quality of medical care.

Internal Support Service Programs: 13% – Financial, planning, legal, personnel, data processing, and administrative services for the Association.

Promote the Effective Delivery of Care: 7% – Development of programs for health manpower, community health care, practice management, physician-hospital relations, health care financing, and health delivery research.

Scientific Policy and Information: 37% – Publication of scientific journals, dissemination of health information to the public, development of scientific policy, investigation of scientific concerns, such as nutrition, drugs, environmental and occupational health, and hypertension.

The AMA Needs Your Support

Membership in all levels of organized medicine is an essential component of professional citizenship and like political citizenship, should not be fragmented. Do you want a voice in government only at the city and county levels? Only at the state level? Or only at the national level? Certainly you would feel disenfranchised if you were deprived of a voice on any of these levels.

Citizenship and membership—both political and professional—is not without cost. Your dues, the cost of professional citizenship, are needed at all levels—your county and state society and the AMA—so that organized medicine can remain an effective organization working for you.

If You're Not An AMA Member, Here's How To Apply

Regular Membership—Physicians, including housestaff, and medical students who are members of their state medical societies or who are eligible for state society membership are required to join the AMA through that society. Simply contact your local medical society. (If you do not have this information, write the Department of Membership Development, AMA, and the name and address of your local society will be sent to you.)

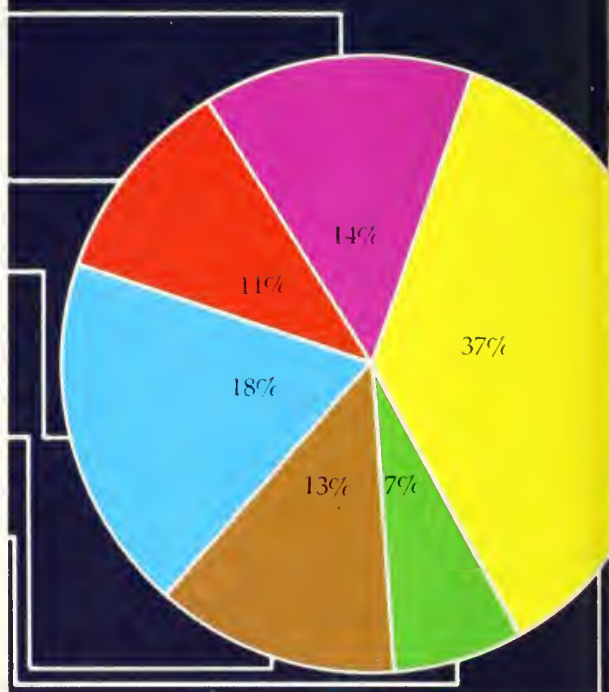
Direct Membership—Physicians, including housestaff, and medical students who are not provided with an avenue for regular active membership through their local society due to limitations or bylaw restrictions of that society may join the AMA as direct members. To join, use the application enclosed.

Transfer Membership—An AMA member who moves from one medical society to another may maintain or renew membership while application is pending in the new medical society.

Dues

Physicians \$250
First Year Practice \$125

Interns, Residents \$35
Medical Students \$15



If you are an AMA member, you should be justifiably proud of what your support has helped the AMA accomplish.

If you are not a member, isn't it time you did your share to support your profession? Join the AMA now. It needs you—your membership and your active participation.



Professional Organizations

KANSAS MEDICAL SOCIETY

1300 Topeka Avenue, Topeka 66612 913/235-2383
 Jerry Slaughter, Executive Director
 Gary Caruthers, Executive Assistant
 Val Braun, M.P.A., Executive Assistant
 Donald D. Goering, M.D., President, 316/582-2136
 Box 576, Coldwater, KS 67029

JOURNAL OF THE KANSAS MEDICAL SOCIETY 913/235-2383
 1300 Topeka Avenue, Topeka 66612
 David E. Gray, M.D., Editor
 Val Braun, M.P.A., Managing Editor

COUNTY MEDICAL SOCIETIES, EXECUTIVE OFFICES

COWLEY COUNTY—404 State Bank Building, Winfield 67156 316/221-1670
 Gene M. Wilcox, Executive Secretary

CRAWFORD COUNTY—Mt. Carmel Med. Center, Pittsburg 66762 316/231-6100
 Fred Tweet, M.D., Secretary-Treasurer

JOHNSON COUNTY—7301 Mission Rd., #322, Shawnee Mission 66208 913/432-9444
 Mrs. Alliene Bennett, Executive Secretary

SALINE COUNTY—826 S. Santa Fe, Salina 67401 913/825-9348
 Larry M. Smith, Executive Secretary

RILEY COUNTY—Box 1208, Manhattan 66502 913/776-3300
 Letha Sexton, Executive Secretary

SEDGWICK COUNTY—1102 S. Hillside, Wichita 67211 316/683-7557
 Dwight Allen, Executive Director

SHAWNEE COUNTY—900 Washburn, Topeka 66606 913/234-5668
 Byron Cook, Executive Secretary

WYANDOTTE COUNTY—30 S. 18th, Kansas City, KS 66102 913/321-9460
 Martha E. Hunt, Executive Secretary

AMERICAN MEDICAL ASSOCIATION

535 N. Dearborn St., Chicago, IL 60610 312/751-6000
 James H. Sammons, M.D., Executive Vice President

AMA WASHINGTON OFFICE (DEPARTMENT OF GOVERNMENTAL RELATIONS)

1776 K Street, N.W., Washington, DC 20006 202/857-1300

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE—KANSAS CITY

39th & Rainbow Boulevard, Kansas City, KS 66103 913/588-5000
 David Waxman, M.D., Executive Vice Chancellor, College of
 Health Sciences and Hospital 913/588-5207

Jesse D. Rising, M.D., Director, Department of Continuing Education 913/588-7130

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE—WICHITA

1101 N. Minneapolis, Wichita, KS 67214 316/268-8221
 Richard A. Walsh, M.D., Dean

KANSAS STATE BOARD OF HEALING ARTS

503 Kansas Ave., Topeka 66603 913/296-7413
 William C. Swisher, M.D., Secretary
 Elizabeth Carlson, Executive Secretary

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

Bldg. 740, Forbes Air Force Base, Topeka 66620 913/296-3745

KANSAS STATE DEPARTMENT OF SOCIAL AND REHABILITATION SERVICES

2700 West Sixth Street, Topeka 66606 913/295-9521
 Kenneth G. Keller, Acting Dir. of State Institutions 913/296-3774
 SRS Information — State Office Building 913/296-3959

Karl Stock, M.D., State Supervising Ophthalmologist, 913/296-4454
 Division of Services for the Blind, 2700 W. 6th, Topeka

Dwight Lawson, M.D., Medical Consultant, Division of 913/296-3911
 Vocational Rehabilitation, 420 E. 29th Street, Topeka 66605

SELECTIVE SERVICE

Richard H. Greer, M.D., Medical Consultant 913/233-9681
 Topeka Medical Center, Topeka 66604

The Kansas Medical Society—1979-1980

COUNCILORS

District 1	.....	Roger D. Warren, Hanover
District 2	.....	Lewis M. Culp, Kansas City
District 3	.....	Lewis G. Allen, Jr., Shawnee Mission
District 4	.....	Rodney Odgers, Pittsburg
District 5	.....	Kenneth M. Boese, Manhattan
District 6	.....	Millard C. Spencer, Topeka
District 7	.....	Marvin Snowbarger, Emporia
District 8	.....	Steven J. Smith, Arkansas City
District 9	.....	Herbert D. Doubek, Belleville
District 10	.....	Herbert Fransen, Newton
District 11	.....	Ivan E. Rhodes, Wichita
District 12	.....	Philip J. Antrim, Anthony
District 13	.....	Wallace N. Weber, Hays
District 14	.....	Donald E. Beahm, Great Bend
District 15	.....	Richard R. Brownrigg, Dodge City
District 16	.....	Floyd L. Smith, Jr., Colby
District 17	.....	Max E. Teare, Garden City
District 18	.....	Robert W. Hughes, Lawrence
District 19	.....	Robert F. Moore, Caney

EXECUTIVE COMMITTEE



Donald D. Goering
Salina
President



Phillip A. Godwin
Lawrence
President-Elect



Herman W. Hiesterman
Quinter
First Vice President



Kermit G. Wedel
Minneapolis
*Second Vice President
AMA Alternate*



Warren E. Meyer
Wichita
Immediate Past President



Jack R. Cooper
Shawnee Mission
Constitutional Secretary



William K. Walker
Sedan
Treasurer



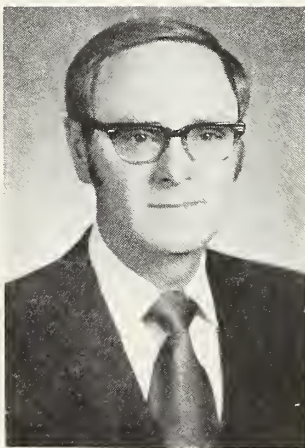
David E. Gray
Topeka
Editor



Clair C. Conard
Dodge City
*Speaker
AMA Delegate*



Alex Scott
Junction City
AMA Delegate



Lew W. Purinton
Wichita
AMA Alternate



John O. Yulich
Kansas City, KS
Vice Speaker

STAFF



Jerry Slaughter
Executive Director



Gary Caruthers
Executive Assistant



Val Braun
*Executive Assistant
Managing Editor*



June Stratton
Secretary



Lee Barber
Secretary



Ramona Perez
Membership Secretary



Eleanor Bell
Editorial Assistant

The Great Laxative Escape



COLACE[®]

diethyl sodium sulfosuccinate

Colace means escape—from laxative stimulation, from laxative harshness, from laxative habit. Colace gently helps soften stools for easy, painless, unstrained elimination. It's the great laxative escape, from infancy to old age. Available in 100 and 50 mg. capsules. Syrup or liquid.

Mead Johnson

PHARMACEUTICAL DIVISION

©1978 Mead Johnson & Company, Inc. All rights reserved. U.S. Pat. 2,578,844

This asthmatic isn't worried about his next breath...

**he's active
he's effectively
maintained on**

QUIBRON[®]

Each capsule or tablespoonful (15 ml) liquid contains theophylline (anhydrous) 150 mg and glyceryl guaiacolate (guaifenesin) 90 mg

- theophylline for effective around-the-clock bronchodilator therapy
- 100% free theophylline

Indications: For the symptomatic relief of bronchospastic conditions such as bronchial asthma, chronic bronchitis, and pulmonary emphysema.

Warnings: Do not administer more frequently than every 6 hours or within 12 hours after rectal dose of any preparation containing theophylline or aminophylline. Do not give other compounds containing xanthine derivatives concurrently.

Precautions: Use with caution in patients with cardiac disease, hepatic or renal impairment. Concurrent administration with certain antibiotics, i.e., clindamycin, erythromycin, troleandomycin, may result in higher serum levels of theophylline. Prothrombin and factor V may increase, but any clinical effect is likely to be small. Metabolites of guaifenesin may contribute to increased urinary 5-hydroxyindoleacetic acid readings, when determined with nitroazanaphthal reagent. Safe use in pregnancy has not been established. Use in case of pregnancy only when clearly needed.

Adverse Reactions: Theophylline may exert some stimulating effect on the central nervous system. Its administration may cause local irritation of the gastric mucosa with possible gastric discomfort, nausea, and vomiting. The frequency of adverse reactions is related to the serum theophylline level and is not usually a problem at serum theophylline levels below 20 mcg/ml.

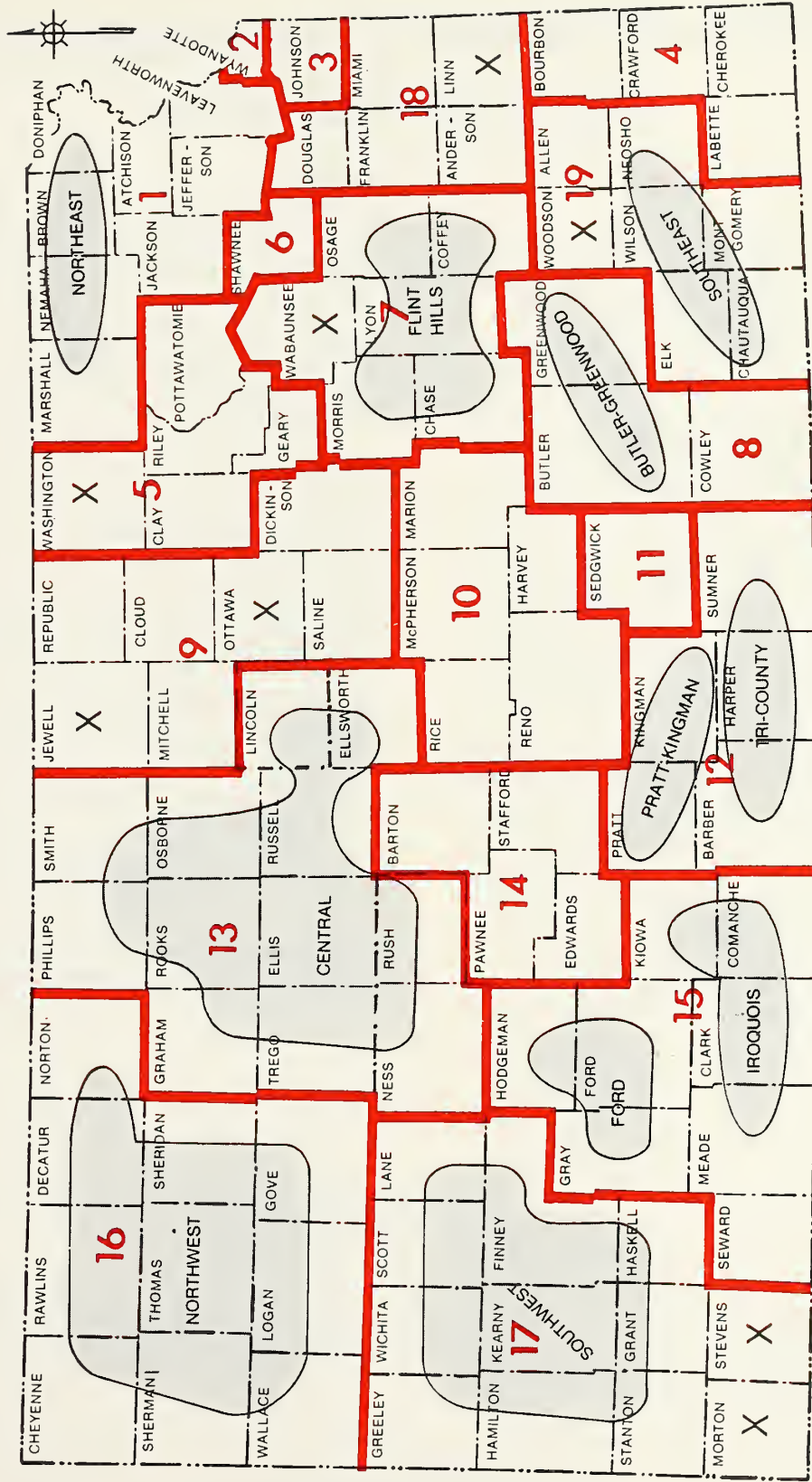
How Supplied: Capsules in bottles of 100 and 1000 and unit-dose packs of 100; Liquid in bottles of 1 pint and 1 gallon.

See package insert for complete prescribing information.

Mead Johnson PHARMACEUTICAL DIVISION

© 1979 Mead Johnson & Company • Evansville, Indiana 47721 U.S.A. MJL B 4294R2

COUNTY MEDICAL SOCIETIES and COUNCIL DISTRICTS



1979-80 KMS Commissions and Committees

COMMITTEES

Constitution and By-Laws

V. D. Schwartz, Wichita, Chairman

Continuing Medical Education

Erwin Janssen, Topeka, Chairman

Drug Utilization Review Project, Advisory

Wayne O. Wallace, Jr., Atchison, Chairman

Editorial Board

David E. Gray, Topeka, Chairman

Emergency Medical Service

Ernest L. McClellan, Wichita, Chairman

Health Planning

Tom Taylor, Salina, Chairman

Impaired Physician Program

George M. Penn, Topeka, Chairman

Insurance Affairs

Richard Cummings, Wichita, Chairman

Joint KMS-KHA

Alex Scott, Junction City, Chairman

Judicial

Franklin G. Bichlmeier, Kansas City, Chairman

KMS-KSNA (Nurses) Liaison

K. William Bruner, Wichita, Chairman

KaMPAC

Ron Davis, Wichita, Chairman

KMS Auxiliary Advisory

Francis T. Collins, Topeka, Chairman

KMS-KAPA (Physician's Assistants) Liaison

D. Cramer Reed, Wichita, Chairman

Legislative

Jimmie A. Gleason, Topeka, Chairman

M.D.-O.D. (Ophthalmology-Optometry)

Michael R. Deitz, Kansas City, Chairman

Maternal Health

Rex Fischer, Manhattan, Chairman

Medical Assistants Advisory

M. E. Nunemaker, Hutchinson, Chairman

Mental Health

Herbert C. Modlin, Topeka, Chairman

Nominating

Warren E. Meyer, Wichita, Chairman

Professional Advertising

Howard Ward, Topeka, Chairman

Public Affairs

James Loeffler, Wichita, Chairman

Rehabilitation

John W. B. Redford, Kansas City, Chairman

Rural Health Manpower

Emerson D. Yoder, Denton, Chairman

School Health

G. William Nice, Topeka, Chairman

Welfare Advisory

Theodore E. Young, Topeka, Chairman

COMMISSIONS

Professional Liability and Medical-Legal Affairs

Daniel K. Roberts, Wichita, Chairman

PHYSICIAN LIBERATION

Have you found full-time practice all consuming with little time for yourself and family? Liberate yourself. Enjoy Rural America and the practice of medicine by joining our locum tenens staff. Individually tailored, these positions give you the time to enjoy life. The demand for this service is so great that we are expanding our staff of qualified family practitioners. Provide care where it is needed and appreciated and we'll make sure you don't have to retire or drop out to enjoy life to its fullest.

For further information call or write to:

Charles M. Gluck, M.D.
Office of the Medical Director
2414 West 7800 South, Suite 202
West Jordan, Utah 84084
1-(800) 453-6403

Component Medical Societies

OFFICERS—COUNCILORS

Allen — George F. DeTar, Iola, President; Eugene Myers, Iola, Secretary; Robert F. Moore, Caney, Councilor, District #19

Anderson — Thomas M. Dougherty, Garnett, President; C. B. Harris, Garnett, Secretary; Robert W. Hughes, Lawrence, Councilor, District #18; D. A. Leitch, Garnett, Alternate

Atchison — A. K. Tayiem, Atchison, President; Robert E. Fast, Atchison, Secretary; R. D. Warren, Hanover, Councilor, District #1; T. A. Montgomery, Sabetha, Alternate

Barton — Robert Polson, Great Bend, President; Perry Schuetz, Great Bend, Secretary; Donald Beahm, Great Bend, Councilor, District #14

Bourbon — James J. Burke, Ft. Scott, President; Douglas P. Weddle, Ft. Scott, Secretary; Rodney Odgers, Councilor, District #4

Butler-Greenwood — Louis S. Morgan, Wichita, President; N. H. Overholser, Eldorado, Secretary; Steven J. Smith, Arkansas City, Councilor, District #8; N. H. Overholser, El Dorado, Alternate

Central Kansas — Harl G. Stump, Hays, President; Ward M. Newcomb, Hays, Secretary; Earl V. Carlson, Hays, Councilor, District #13

Cherokee — R. M. Chubb, Baxter Springs, President; O. A. Mehaffy, Baxter Springs, Secretary; Rodney Odgers, Pittsburg, Councilor, District #4

Clay — Richard H. O'Donnell, Clay Center, President; Dennis Richards, Clay Center, Secretary; K. M. Boese, Manhattan, Councilor, District #5

Cloud — Paul Nelson, Concordia, President; James Moore, Concordia, Secretary; Herbert D. Doubek, Belleville, Councilor, District #9; J. E. Lungstrum, Salina, Alternate

Cowley — William Farrar, Arkansas City, President; Jerry Old, Arkansas City, Secretary; Steven J. Smith, Arkansas City, Councilor, District #8

Crawford — Harold James Armstrong, Pittsburg, President; F. A. Tweet, Pittsburg, Secretary; Rodney Odgers, Councilor, District #4

Dickinson — Don H. Berkley, Abilene, President; C. R. Svoboda, Chapman, Secretary; Herbert D. Doubek, Belleville, Councilor, District #9; J. E. Lungstrum, Salina, Alternate

Douglas — Donald W. Hatton, Lawrence, President; Michael A. Well, Lawrence, Secretary; Robert W. Hughes, Lawrence, Councilor, District #18; D. A. Leitch, Garnett, Alternate

Edwards — W. L. McKim, Kinsley, President; M. D. Atwood, Kinsley, Secretary; Donald E. Beahm, Great Bend, Councilor, District #14

Flint Hills — James N. Glenn, Emporia, President; W. Scott Ryan, Emporia, Secretary; Marvin Snowbarger, Emporia, Councilor, District #7; William Walker, Eskridge, Alternate

Ford — Howell D. Johnson, Dodge City, President; M. Amawi, Dodge City, Secretary; R. L. Brownrigg, Dodge City, Councilor, District #15

Franklin — R. E. Sutton, Ottawa, President; Stephen Saylor, Ottawa, Secretary; Robert W. Hughes, Lawrence, Councilor, District #18; D. A. Leitch, Garnett, Alternate

Geary — Gary A. Copeland, Junction City, President; Charles S. Bollman, Junction City, Secretary; Kenneth M. Boese, Manhattan, Councilor, District #5

Harvey — Milton A. Claasen, Newton, President; Wendell J. Wiens, Newton, Secretary; Herbert Fransen, Newton, Councilor, District #10

Iroquois — J. R. Bradley, Greensburg, President; D. H. Donahoe, Meade, Secretary; R. L. Brownrigg, Dodge City, Councilor, District #15; N. D. Harris, Liberal, Alternate

Jackson — J. C. Seeley, Holton, President; M. R. Moser, Holton, Secretary; R. D. Warren, Hanover, Councilor, District #1; T. A. Montgomery, Sabetha, Alternate

Jefferson — R. R. Snook, McLouth, President; R. C. Keys, Sr., Winchester, Secretary; R. D. Warren, Hanover, Councilor, District #1; T. A. Montgomery, Sabetha, Alternate

Johnson — W. R. Brown, Shawnee Mission, President; J. M. Muehlberger, Shawnee Mission, Secretary; L. G. Allen, Jr., Shawnee Mission, Councilor, District #3; D. J. Smith, Overland Park, Alternate

Labette — M. K. Borklund, Parsons, President; Daniel Pauls, Parsons, Secretary; Rodney Odgers, Pittsburg, Councilor, District #4

Leavenworth — Carroll D. Voorhees, Leavenworth, President; M. Zia Anwar, Leavenworth, Secretary; R. D. Warren, Hanover, Councilor, District #1; T. A. Montgomery, Sabetha, Alternate

McPherson — V. C. Price, McPherson, President; Weir Pierson, McPherson, Secretary; Herbert Fransen, Newton, Councilor, District #10

Marion — Peter Ens, Hillsboro, Acting President; R. G. Franz, Hillsboro, Secretary; Herbert Fransen, Newton, Councilor, District #10

Miami — R. E. Banks, Paola, President; J. G. Rowlett, Paola, Secretary; Robert W. Hughes, Lawrence, Councilor, District #18; D. A. Leitch, Garnett, Alternate

Mitchell — M. B. Klenda, Beloit, President; C. W. Plowman, Jewell, Secretary; Herbert D. Doubek, Belleville, Councilor, District #9; J. E. Lungstrum, Salina, Alternate

Northeast Kansas — Gary Sinning, Hiawatha, President; T. A. Montgomery, Sabetha, Secretary; R. D. Warren, Hanover, Councilor, District #1; T. A. Montgomery, Sabetha, Alternate

Northwest Kansas — John R. Neuenschwander, Hoxie, President; G. D. Marshall, Colby, Secretary; F. L. Smith, Jr., Colby, Councilor, District #16; C. C. Gunter, Quinter, Alternate

Pawnee — O. R. Cram, Jr., Larned, President; T. D. Ewing, Larned, Secretary; Edward L. Jones, Great Bend, Councilor, District #14

Pottawatomie — Tom Dechairo, Westmoreland, President; Tom Walsh, Onaga, Secretary; Kenneth M. Boese, Manhattan, Councilor, District #5

Pratt-Kingman — T. L. Waylan, Nashville, President; Cyril V. Black, Pratt, Secretary; Philip J. Antrim, Anthony, Councilor, District #12

Reno — J. W. Shaw, Jr., Hutchinson, President; F. L. Depenbusch, Hutchinson, Secretary; Herbert Fransen, Newton, Councilor, District #10

Republic — Duane L. Scott, Belleville, President; J. A. Ward, Belleville, Secretary; Herbert D. Doubek, Belleville, Councilor, District #9; J. E. Lungstrum, Salina, Alternate

Rice — C. V. Wolf, Lyons, President; R. A. Siemens, Lyons, Secretary; Herbert Fransen, Newton, Councilor, District #10

Riley — W. H. Tiemann, Manhattan, President; Frank Lyons, Manhattan, Secretary; Kenneth M. Boese, Manhattan, Councilor, District #5

Saline — D. A. Lasley, Salina, President; C. N. Waters, Salina, Secretary; Herbert D. Doubek, Belleville, Councilor, District #9; J. E. Lungstrum, Salina, Alternate

Sedgwick — John J. Schlueter, Wichita, President; Eugene E. Kaufman, Wichita, Secretary; Ivan E. Rhodes, Wichita, Councilor, District #11; William C. Swisher, Wichita, Alternate

Seward — J. W. Koons, Liberal, President; J. D. Reese, Liberal, Secretary; R. L. Brownrigg, Dodge City, Councilor, District #15; N. D. Harris, Liberal, Alternate

Shawnee — Dan Kelly, Topeka, President; S. C. Averill, Topeka, Secretary; M. C. Spencer, Topeka, Councilor, District #6

South Central Tri-County — Walter Forred, Harper, President; Jerry Hall, Anthony, Secretary; Philip J. Antrim, Anthony, Councilor, District #12

Southeast Kansas — Don White, Coffeyville, President; Bob Haskins, Chanute, Secretary; R. F. Moore, Caney, Councilor, District #19; W. K. Walker, Sedan, Alternate

Southwest Kansas — M. J. Zeller, Garden City, President; John Gilbert, Garden City, Secretary; Max E. Teare, Garden City, Councilor, District #17

Stafford — R. P. Quackenbush, St. John, President; C. E. Brown, Stafford, Secretary; D. E. Beahm, Great Bend, Councilor, District #14

Wyandotte — Barbara P. Lukert, Kansas City, President; Michael D. Boggan, Kansas City, Secretary; L. M. Culp, Kansas City, Councilor, District #2

Specialty Society Officers

KANSAS ALLERGY SOCIETY

President — Ralph Hale, Wichita
President-Elect — James Ransom, Topeka
Secretary-Treasurer — Jerry Mathis, Salina

KANSAS SOCIETY OF ANESTHESIOLOGISTS

President — Glen E. Eaton, Salina
Vice President — John D. Robinson, Overland Park
Secretary — Ronald L. Brown, Wichita
Treasurer — Danuta Oktawiec, Shawnee Mission
Delegate to KMS — Hugh S. Mathewson, Kansas City

KANSAS DERMATOLOGY SOCIETY

President — Robert Durst, Topeka

SECTION ON EAR, NOSE AND THROAT

Chairman — Monte Allen, Salina
Vice Chairman — George Randall, Wichita
Secretary-Treasurer — E. E. Tippen, Jr., Wichita

KANSAS CHAPTER, AMERICAN ACADEMY OF FAMILY PHYSICIANS

President — Floyd L. Smith, Colby
President-Elect — William R. Lentz, Topeka
Vice President — Kenneth D. Wedel, Minneapolis
Secretary — Robert E. Boyer, Kingman
Delegates to KMS — K. L. Lohmeyer, Emporia &
Richard R. Brummett, Salina
Executive Secretary — Gene Wilcox, Winfield

AMERICAN SOCIETY OF INTERNAL MEDICINE — KANSAS CHAPTER

President — Karl Hansen, Overland Park
Secretary-Treasurer — Joseph Beggs, Garden City
KMS Delegate — John P. Brockhouse, Emporia

KANSAS SECTION — NEUROLOGICAL SURGERY SOCIETY

President — Charles Brackett, Kansas City
Secretary — Paul Stein, Wichita
KMS Delegate — John Hered, Wichita

SECTION ON NUCLEAR MEDICINE

Chairman — Richard Meidinger, Topeka
Vice Chairman — Jesse H. Marymount, Wichita
Secretary-Treasurer — H. H. Forsyth Winchell, Wichita
KMS Delegate — Richard Meidinger, Topeka

KANSAS OBSTETRICAL AND GYNECOLOGICAL SOCIETY

President — Kermit Krantz, Kansas City
Vice President — Jack Mull, Hutchinson
President-Elect — Henry W. Buck, Jr., Lawrence

Secretary-Treasurer — Dan L. Tappen, Topeka
KMS Delegate — Jimmie Gleason, Topeka

SECTION ON OPHTHALMOLOGY

President — Richard A. Orchard, Lawrence
Vice President — Francis L. Depenbusch, Hutchinson
Secretary-Treasurer — Roger Hall, Wichita
Delegate to KMS — Perry Schuetz, Great Bend

KANSAS ORTHOPEDIC SOCIETY

President — Henry Marsh, Wichita
Secretary-Treasurer — Donald Hobbs, Topeka
KMS Delegate — Henry Marsh, Wichita

KANSAS SOCIETY OF PATHOLOGISTS

President — William K. Bruner, Jr., Wichita
President-Elect — Edward L. Jones, Great Bend
Vice President — John Kepes, Kansas City
Secretary-Treasurer — L. William Halling, Hays
Delegate to KMS — John E. Johnson, Kansas City

AMERICAN ACADEMY OF PEDIATRICS — KANSAS CHAPTER

Chairman — Erwin T. Olson, Newton
Alternate Chairman — Paul L. Nelson, Concordia
Secretary-Treasurer — Ben Rubin, Jr., Kansas City

AMERICAN PSYCHIATRIC ASSOCIATION — KANSAS DISTRICT BRANCH

President — H. Ivor Jones, Prairie Village
President-Elect — Dean Collins, Topeka
Secretary — Charles D. Glazzard, Olathe
Treasurer — Robert L. Obourn, Topeka
Representative to Assembly — Samuel L. Bradshaw, Topeka
Deputy Representative to Assembly — Herbert Klemmer, Topeka
Editor of Newsletter — Steve E. Shelton, Topeka
Executive Secretary — Joan Klemmer, Topeka
Delegate to KMS — Herbert Modlin, Topeka

AMERICAN COLLEGE OF RADIOLOGY — KANSAS CHAPTER

President — C. H. Joseph Chang, Kansas City
Vice President — William T. Braun, III, Wichita
Secretary-Treasurer — Stephen J. Tempero, Topeka
Delegate to KMS — William Allen, Kansas City

AMERICAN COLLEGE OF SURGEONS — KANSAS CHAPTER

President — Gil Santoscoy, Wichita
President-Elect — Calvin Bigler, Garden City
Secretary-Treasurer — Calvin Bigler
KMS Delegate — Calvin Bigler

Related Organizations — Officers and Committees

KMS AUXILIARY

President — Mrs. Kermit Wedel, Minneapolis
President-Elect — Mrs. John Huff, Kansas City
1st Vice President — Mrs. Robert Moore, Caney
2nd Vice President — Mrs. David G. Laury, Ottawa
Recording Secretary — Mrs. Frank Bichlmeier, Shawnee Mission
Treasurer — Mrs. Thiel Bloom, Kingman
Corresponding Secretary — Mrs. J. Allen Sanders, Lawrence

ADVISORY COMMITTEE TO KMS AUXILIARY

Chairman — John Mitchell, Salina
Frank Bichlmeier, Kansas City
Thiel Bloom, Kingman
John Huff, Kansas City
David Laury, Ottawa
Robert Moore, Caney
Kermit Wedel, Minneapolis

KANSAS MEDICAL ASSISTANT'S SOCIETY

President — Dorothy Nunemaker, R.N., Hutchinson
President-Elect — Virginia Wells, CMA-A, Topeka
1st Vice President — Anna Marie Dercher, R.T., Kansas City
2nd Vice President — Frances Nastav, Kansas City
Secretary — Delores Smith, Larned
Treasurer — Rose Janda, Wichita

ADVISORY COMMITTEE TO MEDICAL ASSISTANTS

Chairman — M. E. Nunemaker, Hutchinson
William R. Allen, Kansas City
I. Ross Grimes, Liberal
Kenneth McLain, Ransom
John L. Morgan, Emporia
R. C. Polson, Great Bend
Richard J. Reece, Salina
John H. Rempel, Wichita
Douglas D. Sheafor, Topeka
Exofficio Members:
Donald D. Goering, Coldwater
Val Braun, Topeka

KANSAS BLUE SHIELD BOARD

Chairman — Rex R. Fischer, M.D.
1st Vice Chairman — W. E. McAllaster, M.D.
2nd Vice Chairman — Herbert Fransen, M.D.
Secretary — George J. Mastio, M.D.
Past Chairman — J. E. Roderick, M.D.

KANSAS FOUNDATION FOR MEDICAL CARE, INC.

President — Louis M. Culp, Kansas City
Vice President — Richard M. Glover, Newton
Secretary — L. William Halling, Hays
Treasurer — George R. Learned, Lawrence

KANSAS STATE BOARD OF HEALING ARTS

Julia Ward Barbee, D.O., Pratt
Claud J. Bray, D.C., Larned
F. Lee Doctor, D.O., Agra
Clara M. Eckdall, Emporia
Herman H. Jones, Jr., M.D., Kansas City
Joan Marshall, D.C., President, Parsons
James A. McClure, M.D., Topeka
Don L. McKelvey, D.C., Ottawa
Paul L. Rodriguez, M.D., Garden City
Harold L. Sauder, D.P.M., Independence
Ross T. Shook, D.O., Hutchinson
William C. Swisher, M.D., Secretary
Elizabeth Carlson, Executive Secretary

THE JOURNAL OF THE KMS

Editorial Board: David E. Gray, M.D., *Editor*
Richard H. Greer, M.D.
M. Martin Halley, M.D.
Donald R. Pierce, M.D.
John A. Segerson, M.D.
Associate Editors: Jesse D. Rising, M.D., Kansas City
Robert T. Manning, M.D., Wichita
Editorial Consultant: Orville R. Clark, M.D.

KANSAS CORONERS SOCIETY

President — Cyril V. Black, Pratt
Vice President — W. Wike Scamman, Topeka
Secretary-Treasurer — William G. Eckert, Wichita

Hospitals — State Institutions — Poison Control Centers — Home Health Agencies Genetic Counseling Centers

GENERAL HOSPITALS IN KANSAS

Abilene — Memorial, 511 N.E. 10th Street 67410, Leon J. Boor, Adm. — 913/263-2100
Anthony — Anthony Hospital & Clinic, P.O. Box 392 67003, Juanita Armstrong, Adm. — 316/842-5111
Arkansas City — Arkansas City Memorial, 216 West Birch 67005, Robert L. Kelling, Adm. — 316/442-2500
Ashland — Ashland District, 709 Oak 67831, Hazel Thomas, Adm. — 316/635-2241
Atchison — Atchison, 1301 N. Second 66002, James A. Asher, Adm. — 913/367-2131
Attica — Attica District, P.O. Box 268 67009, G. Fred Trombley, Adm. — 316/254-7253
Atwood — Rawlins County, P.O. Box 47 67730, Jim Lucas, Acting Adm. — 913/626-3211
Augusta — Augusta Medical Complex, P.O. Box 430 67010, Wayne E. Mathias, Adm. — 316/775-5421
Baxter Springs — Baxter Memorial, P.O. Box 151 66713, James L. Kirkpatrick, Adm. — 316/856-2314
Belleville — Republic County, 66935, Bonnie Elliott, R.N., Supt. — 913/527-2255
Beloit — Mitchell County Community, 400 West 8th 67420, Doris Haworth, Supt. — 913/738-2266
Bucklin — Bucklin District, P.O. Box 38 67834, Larry Landers, Adm. — 316/826-3211
Burlington — Coffey County, Fourth & Garrettsen 66839, William Griffith, Adm. — 316/364-2121
Caldwell — Sumner County Dist. #1, P.O. Box 111 67022, Eugene M. Horak, Adm. — 316/845-6492
Caney — Caney Municipal, P.O. Box 325 67333, Susan Barrett, Adm. — 316/879-2182
Cedar Vale — Cedar Vale Regional, P.O. Box 398 67024, John F. Meyers, Adm. — 316/758-2266
Chanute — Neosho Memorial, 629 S. Plummer 66720, Murray L. Brown, Adm. — 316/431-4000
Clay Center — Clay County, 617 Liberty 67432, Charles E. Gray, Adm. — 913/632-2144
Coffeyville — Coffeyville Memorial, P.O. Box 856 67337, George A. Smith, Adm. — 316/251-1200
Colby — St. Thomas, P.O. Box 667 67701, Robert A. Cramer, Adm. — 913/462-3335

Coldwater — Comanche County, Second & Frisco 67029, Bea Bumgarner, Adm. — 316/583-2144
Columbus — Maude Norton Memorial City, 220 N. Pennsylvania 66725, Edith Allen, Adm. — 316/429-2545
Concordia — St. Joseph, 1100 Highland Drive 66901, Sister Elizabeth Stover, Pres. — 913/243-1234
Council Grove — Morris County, 600 N. Washington 66846, Ron Thompson, Adm. — 316/767-5151
Dighton — Lane County, P.O. Box 728 67839, Harriet Vance, Supt. — 316/397-5321
Dodge City — Dodge City Regional, P.O. Box 1478 67801, Raymond A. Rouleau, Jr., Adm. — 316/225-9050
El Dorado — Susan B. Allen Memorial, P.O. Box 251 67042, Walter E. Shain, Adm. — 316/321-3300
Elkhart — Morton County, P.O. Box 937 67950, Dale L. Martin, Adm. — 316/697-2141
Ellinwood — Ellinwood District, 605 North Main 67526, Marge Ney, R.N., Supt. — 316/564-2549
Ellsworth — Ellsworth County Veterans' Memorial, P.O. Box F 67439, Harold R. Horton, Adm. — 913/472-3111
Emporia — Newman Memorial County, 12th & Chestnut 66801, Roger B. Samuelson, Adm. — 316/343-6800
Emporia — St. Mary's, Fifteenth & State 66801, John M. Revolinski, Adm. — 316/342-2450
Eureka — Greenwood County, 100 East 16th 67045, Phyllis Koenig, Supt. — 316/583-7451
Fort Scott — Mercy, 821 Burke Street 66701, Sister Mary Trinity, Pres. — 316/223-2200
Fredonia — St. Margaret's Mercy, P.O. Box 519 66736, Sister Mary Faith Matney, Adm. — 316/378-2121
Garden City — St. Catherine, 608 N. Fifth Street 67846, Sister Anita Schugart, Pres. — 316/275-6111
Gardner — Gardner Community Medical Center, 427 W. Main 66030, Henry R. Steinhaus, Adm. — 913/884-8711
Garnett — Anderson County, P.O. Box 309 66032, Larry G. Patterson, Adm. — 913/448-3131

- Girard** — Hospital District #1, West St. John & Hospital Road 66743, Barbara Lohmeyer, Adm. — 316/724-8291
- Goessel** — Mennonite Bethesda, 412 E. Main 67053, Gloria Wondra, Adm. — 316/367-2291
- Goodland** — Northwest Kansas Medical Center, P.O. Box 629 67735, Bill D. Wilson, Adm. — 913/899-3625
- Great Bend** — Central Kansas Medical Center, 3515 Broadway 67530, Sister Philomena Hrencher, Pres. — 316/792-2511
- Greensburg** — Kiowa County Memorial, P.O. Box 616 67054, Jerry Unruh, Adm. — 316/723-2161
- Halstead** — Halstead, 328 Poplar 67056, Sister Mary de Paul, Adm. — 316/835-2651
- Hanover** — Washington County District #1, P.O. Box 38 66945, Roger D. Warren, M.D., Adm. — 913/337-2214
- Harper** — Harper County District #5, 12th & Maple 67058, Marshall P. Ray, Adm. — 316/896-7324
- Hays** — Hadley Regional Medical Center, 201 East Seventh Street 67601, Donald M. Stewart, Adm. — 913/628-8251
- Hays** — St. Anthony, P.O. Box 660 67601, Oren M. Windholz, Pres. — 913/625-7301
- Herington** — Herington Municipal, 100 East Helen 67449, Jon Robison, Adm. — 913/258-2207
- Hiawatha** — Hiawatha Community, 300 Utah 66434, Gerald E. Alkire, Adm. — 913/742-2131
- Hill City** — Graham County, 304 Prout 67642, William V. Pugh, Adm. — 913/674-2121
- Hillsboro** — Salem, 701 South Main 67063, Donald Klassen, Adm. — 316/947-3114
- Hoisington** — Hoisington Lutheran, 250 West Ninth 67544, Angeline C. Deutsch, Adm. — 316/653-2114
- Holton** — Holton City, 418 West Fifth 66436, Roger S. Lewis, Adm. — 913/364-2116
- Horton** — Horton Community, P.O. Box 191 66439, H. Berton Scott, Adm. — 913/486-2642
- Hoxie** — Sheridan County, 826 Eighteenth Street 67740, Elizabeth Charlton, R.N., Adm. — 913/675-3281
- Hugoton** — Stevens County, P.O. Box 10 67951, Houston W. Edwards, Adm. — 316/544-8511
- Hutchinson** — Hutchinson Hospital Corp., 1701 East 23rd Avenue 67501, Joseph B. Mackey, Pres. — 316/663-6811
- Independence** — Mercy, 800 West Myrtle 67301, Sister Mary Faith Matney, Adm. — 316/331-2200
- Iola** — Allen County, 101 South First 66749, Ted Mohr, Exec. Dir. — 316/365-3131
- Jetmore** — Hodgeman County Health Center, 67854, Loal Stevens, Adm. — 316/357-8361
- Johnson** — Stanton County, P.O. Box E 67855, Mrs. Evelyn Walters, Adm. — 316/492-6250
- Junction City** — Geary Community, P.O. Box 490 66441, Harold G. Sadowski, Adm. — 913/238-4131
- Kansas City** — Bethany Medical Center, 51 North 12th 66102, John L. Millard, Pres. — 913/281-8400
- Kansas City** — Prov.-St. Margaret Health Center, P.O. Box 12430 66112, Sister Kathleen, Exec. Dir. — 913/334-2500
- Kansas City** — University of Kansas Medical Center, 39th & Rainbow Blvd. 66103, Dr. Masahiro Chiga, Med. Dir. — 913/588-5250
- Kingman** — Kingman Community, P.O. Box 376 67068, Phillip L. Unruh, Adm. — 316/532-3147
- Kinsley** — Edwards County, 620 West 8th Street 67547, Robert L. Mullen, Adm. — 316/659-3621
- Kiowa** — Kiowa District, 810 Drumm Street 67070, John D. McGee, Adm. — 316/825-4130
- La Crosse** — Rush County Memorial, Eighth & Locust 67548, Tom Talley, Adm. — 913/222-2545
- Lakin** — Kearny County, 306 Kansas 67860, Jerrell J. Horton, Adm. — 316/355-7111
- Larned** — St. Joseph Memorial, 923 Carroll Street 67550, Arthur Thomas, Pres. — 316/285-3161
- Lawrence** — Lawrence Memorial, 325 Maine Street 66044, Robert B. Ohlen, Chief Executive Officer — 913/843-3680
- Lawrence** — Watkins Memorial, University of Kansas 66045, Martin Wollmann, M.D., Dir. — 913/843-4455
- Leavenworth** — Cushing Memorial, 623 Marshall 66048, Charles L. Rogers, Adm. — 913/682-8000
- Leavenworth** — Saint John, 3500 South 4th 66048, Sister Ann Marita Loosen, Adm. — 913/682-3721
- Leoti** — Wichita County, P.O. Box 968 67861, Kim Berning, Supt. — 316/375-2233
- Liberal** — Southwest Medical Center, P.O. Box 1340 67901, John D. Rollins, Adm. — 316/624-1651
- Lincoln** — Lincoln County, 624 North Second 67455, Shirley Ronan, Supt. — 913/524-4403
- Lindsborg** — Lindsborg Community, 605 West Lincoln 67456, Marie Muller, R.N., Supt. — 913/227-3308
- Lyons** — Rice County District #1, 619 South Clark 67554, Administrator — 316/257-2348

- Manhattan** — Lafene Student Health Center, Kansas State University 66506, Robert E. Sinclair, M.D., Dir. — 913/532-6544
- Manhattan** — Memorial, P.O. Box 1208 66502, Thomas O. Faulkner, Adm. — 913/776-3300
- Manhattan** — Saint Mary, P.O. Box 1047 66502, Dan P. Broyles, Adm. — 913/776-3322
- Mankato** — Jewell County, P.O. Box 327 66956, Danny L. Johnson, Adm. — 913/378-3137
- Marion** — St. Luke, 1012 East Melvin 66861, Ronald Cork, Adm. — 316/382-2177
- Marysville** — Community Memorial, 708 N. 18th Street 66508, Harley B. Appel, Adm. — 913/562-2311
- McPherson** — Memorial, P.O. Box 1166 67460, Ronald G. Schaumburg, Adm. — 316/241-2250
- Meade** — Meade District, 510 East Carthage 67864, George L. Martin, Adm. — 316/873-2141
- Medicine Lodge** — Medicine Lodge Memorial, 710 North Walnut 67104, Darryl D. Serpan, Adm. — 316/886-3771
- Minneapolis** — Ottawa County, P.O. Box 209 67467, Doris Bogart, R.N., Supt. — 913/392-2122
- Minneola** — Minneola District, 212 Main 67865, George W. Ferguson, Adm. — 316/885-4264
- Moundridge** — Mercy, 218 East Pack 67107, Doyle K. Johnson, Adm. — 316/345-6391
- Neodesha** — Wilson County, P.O. Box 149 66757, Dewey Smith, Adm. — 316/325-2611
- Ness City** — Ness County District #2, 312 Custer 67560, Dee Eibert, Adm. — 913/798-2291
- Newton** — Axtell Christian, 209 East Broadway 67114, W. Charles Waters, Adm. — 316/283-5200
- Newton** — Bethel Deaconess, 411 Southeast Second 67114, Marvin H. Ewert, Adm. — 316/283-2700
- Newton** — Prairie View Mental Health Center, P.O. Box 467 67114, Larry W. Nikkel, Adm. — 316/283-2400
- Norton** — Norton County, P.O. Box 250 67654, Frank A. Mlinar, Adm. — 913/877-3351
- Norton** — Valley Hope Alcoholism Treatment Center, P.O. Box 410 67654, Dennis R. Gilhousen, Adm. — 913/927-5101
- Oakley** — Logan County, 211 Cherry Street 67748, Rodney Bates, Adm. — 913/672-3211
- Oberlin** — Decatur County, 810 West Columbia 67749, Larry D. Ganje, Adm. — 913/475-2208
- Olathe** — Mid-Continent Psychiatric, 122 North Cooper 66061, Jack Rash, Adm. — 913/782-4282
- Olathe** — Olathe Community, 300 S. Rogers Road 66061, Frank Devocelle, Adm. — 913/782-1451
- Onaga** — Community, 6th & Lucien 66521, James M. Cazier, Adm. — 913/889-4274
- Osborne** — Osborne County Memorial, 424 West New Hampshire 67473, George Griffith, Adm. — 913/346-2121
- Oswego** — Oswego, 402 Ohio 67356, G. Gail Roberts, Adm. — 316/795-4423
- Ottawa** — Ransom Memorial, 13th & South Main 66067, Gary A. Moore, Adm. — 913/242-3344
- Overland Park** — Suburban Medical Center, P.O. Box 5959 66215, Earl P. Holland, Exec. Dir. — 913/492-1000
- Paola** — Miami County, 501 South Hospital Drive 66071, Robert E. Johnson, Adm. — 913/294-2327
- Parsons** — Labette County Medical Center, P.O. Box 767 67357, Jerry D. Lilley, Adm. — 316/421-4880
- Parsons** — Katy Memorial, 400 Katy 67357, Bill D. Hutson, Adm. — 316/421-2700
- Phillipsburg** — Phillips County, P.O. Box 607 67661, Joanne Johnson, R.N., Supt. — 913/543-5226
- Pittsburg** — Mt. Carmel Medical Center, Centennial & Rouse 66762, Sister Mary Immaculate, Adm. — 316/231-6100
- Plainville** — Plainville Rural, 304 South Colorado 67663, William C. Brickley, Adm. — 913/434-4553
- Pratt** — Pratt Regional Medical Center, Third & Commodore 67124, David M. Beach, Pres. and Chief Executive Officer — 316/672-6476
- Quinter** — Gove County, 5th & Garfield 67752, Mike Shaw, Adm. — 913/754-3341
- Ransom** — Ness County District #1, P.O. Box 268 67572, Sister Malachy Stockemer, Adm. — 913/731-2231
- Russell** — Russell City, 200 South Main 67665, L. Paul Grummer, Adm. — 913/483-3131
- Sabetha** — Sabetha Community, 14th & Oregon 66534, Rita Becker, R.N., Acting Supt. — 913/284-2121
- St. Francis** — Cheyenne County, 210 W. First 67756, Helen Burnham, R.N., Adm. — 913/332-2104
- St. John** — St. John District, 609 East 1st 67576, Richard D. McGhee, Adm. — 316/549-3255
- Salina** — Asbury, P.O. Box 1608 67401, Clay D. Edmands, Adm. — 913/827-4411
- Salina** — St. John's, P.O. Box 1688 67401, Roy E. White, Adm. — 913/827-5591

Satanta — Satanta District, P.O. Box 66 67870, Carlyle Kiehne, Adm. — 316/649-2200

Scott City — Scott County, 309 East Third 67871, Jackie John, R.N., Supt. — 316/872-5811

Sedan — Sedan City, P.O. Box C 67361, Gary Martin, Adm. — 316/725-3115

Seneca — Nemaha Valley Community, 604 Nemaha 66538, Helen McGinty, R.N., Supt. — 913/336-2181

Shawnee Mission — Shawnee Mission Medical Center, 74th & Grandview 66204, Thomas W. Flynn, Exec. Dir. — 913/676-2000

Smith Center — Smith County Memorial, South Main Street 66967, Lucille Herman, R.N., Supt. — 913/282-6661

Spearville — Spearville District, Hall & Dorsett 67876, Don Keesen, Adm. — 316/385-2661

Stafford — Stafford District, 502 South Buckeye 67578, Glen Dormois, Adm. — 316/234-5221

Syracuse — Hamilton County, P.O. Box 688 67878, Dan Kirkland, Adm. — 316/384-7461

Topeka — Memorial, 600 Madison 66607, Ivan D. Anderson, Adm. — 913/354-5100

Topeka — C F. Menninger Memorial, P.O. Box 829 66601, Administrator — 913/234-9566

Topeka — St. Francis Hospital & Medical Center, 1700 West 7th 66606, Sister Mary Walter, Adm. — 913/295-8000

Topeka — Stormont-Vail Regional Medical Center, 1500 West 10th 66606, C. Jerome Jorgensen, Pres. — 913/354-6000

Tribune — Greeley County, 308 Greeley 67879, Irene Pierce, R.N., Supt. — 316/376-4222

Ulysses — Bob Wilson Memorial, 415 North Main 67880, Leo Miller, Adm. — 316/356-1266

WaKeeney — Trego County-Lemke Memorial, 320 Thirteenth Street 67672, Connie Wagoner, R.N., Supt. — 913/743-2134

Wamego — Wamego City, 711 Genn Drive 66547, Rogers L. Brazier, Adm. — 913/456-2295

Washington — Washington County, East Third Street 66968, Beth Koch, R.N., Adm. — 913/325-2211

Wellington — St. Lukes, 1323 North A Street 67152, Garrett E. Colquette, Adm. — 316/326-7451

Wellington — Wellington Hospital & Clinic, 924 South Washington Avenue 67152, Regina E. Cantrell, Adm. — 316/326-3353

Westmoreland — Dechair, First & North Streets 66549, Thomas C. Dechair, Adm. — 913/457-3311

Wichita — E. B. Allen Memorial, 1001 North Minneapolis 67214, Don M. Kordis, Adm. — 316/268-8211

Wichita — Osteopathic, 2622 West Central Avenue 67203, John R. McGraw, Adm. — 316/945-9161

Wichita — St. Francis, 929 North St. Francis 67214, Sister Mary Sylvia Egan, Adm. and Chief Executive Officer — 316/262-6211

Wichita — St. Joseph Medical Center, 3600 East Harry Street 67218, Joseph A. Heeb, Adm. — 316/685-1111

Wichita — Wesley Medical Center, 550 North Hillside 67214, Roy C. House, Pres. and Chief Executive Officer — 316/685-2151

A. B. Davis, Jr., Exec. V.P. and Chief Operating Officer — Ext. 7114

Winchester — Jefferson County Memorial, 66097, Ben Witzke, Adm. — 913/774-4340

Winfield — William Newton Memorial, 1300 East 5th 67156, Harold W. Steadham, Adm. — 316/221-2300

STATE INSTITUTIONS

Larned — Larned State Hospital, P.O. Box 89 67550, E. Wayne Heshner, Acting Supt. — 316/285-2131

Norton — Norton State Hospital, 67654, Sam H. Freeland, Supt. — 913/877-3301

Osawatomie — Osawatomie State Hospital, P.O. Box 500 66064, J. Russell Mills, Supt. — 913/755-3151

Parsons — Parsons State Hospital & Training Center, P.O. Box 738 67357, Howard V. Bair, M.D., Supt. — 316/421-6550

Topeka — Kansas Neurological Inst., 3107 West 21st Street 66604, Leonard V. Lavis, Supt. — 913/296-5301

Topeka — Topeka State Hospital, 2700 West 6th 66606, Eberhard G. Burdzik, M.D., Supt. — 913/296-4307

Winfield — Winfield State Hospital & Training Center, R.R. #1 67156, Robert K. Dean, Supt. — 316/221-1200

VETERANS HOSPITALS AND MILITARY HOSPITALS

Ft. Leavenworth — U. S. Munson Army Hospital, Pope and Biddle Avenue 66027, Col. Calvin P. Sandifer, Hospital Exec. Officer — 913/684-3241

Fort Riley — Irwin U. S. Army Hospital, P.O. Box D 38 66442, Major Sterling Hammond, Associate Adm. — 913/239-3663

Leavenworth — Veterans Administration Center, 66048, Margaret C. Michelson, Center Director — 913/682-2000

Topeka — Veterans Administration Medical Center, 2200 Gage 66622, Roland R. Hill, Hospital Director — 913/272-3111

Wichita — McConnell Air Force Base, USAF Hospital 67221, Major Joseph A. Borho, Hosp. Adm. — 316/685-9254

Wichita — Veterans Administration Center, 5500 E. Kellogg 67218, George B. Lappin, Dir. — 316/685-2221

POISON CONTROL CENTERS

Atchison — Atchison Hospital — 913/367-2131

Dodge City — Trinity Hospital — 316/483-8133

Emporia — Newman Memorial Hospital — 316/342-7120

Fort Scott — Mercy Hospital — Day: 316/223-3100; Night: 316/223-2200

Great Bend — Central Kansas Medical Center — Day: 316/793-3523; Night: 316/792-2511

Hays — Hadley Memorial Hospital — Day: 913/625-2515, Ext. 237; Night: 913/625-3441

Kansas City

University of Kansas Medical Center — 913/588-6633

Bethany Hospital — 913/621-6600

Lawrence — Lawrence Memorial Hospital — Day: 913/843-3680 or 842-4477; Night: 913/843-5874

Parsons — Labette County Medical Center — 316/421-4880

Salina — St. John's Hospital — 913/827-5591, Ext. 222

Topeka — Stormont-Vail Hospital — 913/354-6100

Wichita — Wesley Hospital — 316/685-2151, Ext. 377

Kansas Poison Control Information Center:

Kansas Department of Health, Food and Drug Division, Topeka — Evan Wright, Director — 913/862-9360, Ext. 541

Antivenin Index Center — 405/271-5454

HOME HEALTH AGENCIES

Anderson County Hospital, Garnett 60032 — 913/448-3131

Barton County Health Dept., Courthouse, Great Bend 67530 — 316/793-7879

Butler-Greenwood County Health Dept., Courthouse, El Dorado 67042 — 316/321-3400

Clay County Hospital, Clay Center 67432 — 913/632-2144

Cloud County Health Dept., Courthouse, Concordia 66901 — 913/243-3588

Coffey County Health Dept., Courthouse, Burlington 66839 — 316/364-5831

Douglas County Visiting Nurses' Association, 342 Missouri St., Lawrence 66044 — 913/843-3738

Ellis County-St. Anthony Hospital, Hays 67601 — 913/625-2556

Ellsworth County Health Dept., Courthouse, Ellsworth 67439 — 913/472-4234

Ford County Health Dept., Courthouse, Dodge City 67801 — 316/225-4991

Franklin County Health Dept., 112 W. Tecumseh, Ottawa 66067 — 913/242-1873

Graham County Hospital, Hill City 67642 — 913/674-2121

Harper County Health Dept., Courthouse, Anthony 67003 — 316/842-5264

Harvey County Health Dept., Courthouse, Newton 67114 — 316/283-1060

Jackson County Health Dept., Courthouse, Holton 66436 — 913/364-2670

Jefferson County Health Dept., Courthouse, Os-kaloosa 66066 — 913/863-2447

Kansas City Visiting Nurses' Association, One Gateway Center, Suite 219, Kansas City, Kansas 66117 — 913/371-3770

Kingman County Health Dept., Courthouse, Kingman, 67068 — 316/532-2221

Labette County Health Dept., Box 786, Parsons 67357 — 316/421-4350

Logan County Hospital, Oakley 67748 — 913/672-3211

Lyon County Home Health Service, Newman Memorial Hospital, Emporia 66801 — 316/342-8562

McPherson County Health Dept., Courthouse, McPherson 67460 — 316/241-1753

Morris County Health Dept., Courthouse, Council Grove 66846 — 316/767-5175

Osage County Health Dept., Courthouse, Lyndon 66451 — 913/828-3281

Pratt County Health Dept., 106 E. 2nd, Pratt 67124 — 316/672-6122

Reno County-St. Elizabeth Hospital, 500 W. 20th, Hutchinson 67501 — 316/665-5531

Republic County Health Dept., Courthouse, Belleville 66935 — 913/527-5385

Rice County Health Dept., Courthouse, Lyons 67554 — 316/257-2171

Riley County Health Dept., 616 Poyntz, Manhattan 66502 — 913/776-9721

Russell County Health Dept., Courthouse, Russell 67665 — 913/483-2641

Salina-Saline County Health Dept., 300 W. Ash, Salina 67401 — 913/827-9376

Sedgwick County Health Dept., 1900 E. 9th, Wichita 67214 — 316/268-8433

Shawnee County Health Dept., 1615 W. 8th, Topeka 66606 — 913/233-8961

Sheridan County Hospital, Hoxie 67740 — 913/675-3281

Thomas County-St. Thomas Hospital, Colby 67701 — 913/462-3335

Washington County Health Dept., Washington 66968 — 913/325-2600

GENETIC COUNSELING CENTERS

Kansas City — Genetic Counseling Center, Division of Medical Genetics, K.U.M.C., 39th & Rainbow Blvd., Kansas City, KS 66103 — 913/588-6043 — R. Neil Schimke, M.D., Director

Topeka — Genetic Counseling Center, 2029 McAlister, Topeka, KS 66604 — 913/273-6173 — David E. Gray, M.D., Director

Wichita — Genetic Counseling Unit, Wesley Medical Center, 550 N. Hillside, Wichita, KS 67214 — 316/685-2151

To Contact Your Legislators:

U. S. CONGRESSIONAL DELEGATION

Senators:

Robert Dole, 2213 Dirksen Senate Office Bldg., 20510. (202) 224-6521

Nancy L. Kassebaum, 304 Russell Senate Office Bldg., 20510. (202) 224-4774

Representatives:

1. Keith G. Sebelius, 1211 Longworth House Office Bldg., 20515. (202) 225-2715

2. Jim Jeffries, 128 Cannon House Office Bldg., 20515. (202) 225-6601

3. Larry Winn, Jr., 2416 Rayburn House Office Bldg., 20515. (202) 225-2865

4. Dan Glickman, 1507 Longworth House Office Bldg., 20515. (202) 225-6216

5. Robert Whittaker, 516 Cannon House Office Bldg., 20515. (202) 225-3911

When writing, the following form is appropriate:

Senators:

Honorable John Doe,
United States Senate
Address

Dear Senator Doe:

Representatives:

Honorable John Doe,
House of Representatives
Address

Dear Mr. Doe:

To telephone Senators and Representatives in Washington, dial or call Area Code 202, 224 plus the four-digit extension shown above with the Senator's name. To reach a Representative, dial 225, plus the extension number.

KANSAS LEGISLATURE

To write state Senators and Representatives, the following addresses may be used:

Senators:

Honorable John Doe
Senate Chambers
State Capitol Building
Topeka, KS 66612

Dear Senator Doe:

Phone: (913) 296-7300

Representatives:

Honorable John Doe
House of Representatives
State Capitol Building
Topeka, KS 66612

Dear Representative Doe:

Phone: (913) 296-7500

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



Main Bank/3433 E. Central • Wichita, Kansas 67208
Central Two/First and Hillside • Central Northwest/21st and Amidon
All Locations (316) 686-7111
MEMBER FDIC

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

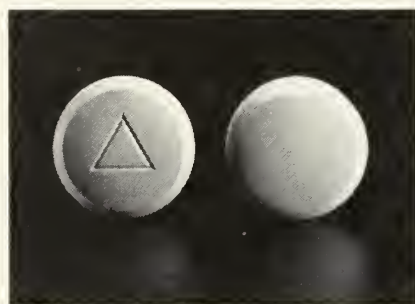
TEST	CODE	PRICE
GLUCOSE	93-11-1	10.00
CHOLESTEROL	93-11-2	10.00
TRIGL	93-11-3	10.00
URIC ACID	93-11-4	10.00
CREATININE	93-11-5	10.00
BUN	93-11-6	10.00
ALBUMIN	93-11-7	10.00
GLUTAMATE	93-11-8	10.00
ALANINE	93-11-9	10.00
TOTAL BILIRUBIN	93-11-10	10.00
ALP	93-11-11	10.00
LDH	93-11-12	10.00
AST	93-11-13	10.00
GGT	93-11-14	10.00
PROTEIN	93-11-15	10.00
URIC ACID	93-11-16	10.00
GLUTAMATE	93-11-17	10.00
ALANINE	93-11-18	10.00
BILIRUBIN	93-11-19	10.00
LDH	93-11-20	10.00
AST	93-11-21	10.00
GGT	93-11-22	10.00
PROTEIN	93-11-23	10.00

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

 **THE LATTIMORE-FINK LABORATORIES, INC.**
A DAMON LABORATORY
115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621

The Maker

Examining a Few Myths About Prescribing.



Increasing pressure is being put on the practicing physician to prescribe drugs generically. You are told that brand-name products are universally “expensive” and generic versions are relatively “cheap.” To make this case, the most extreme (rather than typical) price differentials are cited. Thus, consumers are led to believe that such differentials are commonplace. Even your knowledge and your motives as a physician are questioned.

Understandably, these views have created myths. We think it's time to examine them in the light of all the facts and ramifications.

MYTH: There are no differences in quality and performance between brand-name products and their generic counterparts. The corollary is that there are no differences among products made by high-technology, quality-conscious, research-based companies and those made by commodity-type suppliers.

FACT: The Food and Drug Administration does a good job in monitoring a generally excellent drug supply. Still, it has nowhere near the resources to guarantee the quality and bioavailability of all marketed products at any given time. Just a few months ago, for example, it noted that batches of tetracycline HCl capsules which met official monograph requirements were

not bioequivalent to a reference product. As you know, there is substantial literature on this subject affecting many drugs, including such antibiotics as tetracycline and erythromycin. The record on drug recalls and court actions affirms strongly that there are differences among pharmaceutical companies and their products. Research-intensive companies have far better records than those that do no research and may practice minimum quality assurance.

MYTH: Industry favors only “expensive” brand names and denigrates all generics.

FACT: PMA companies make 90 to 95 percent of the drug supply, including, therefore, most of the generics. Drug nomenclature is not the important point; it's the competence of the manufacturer and the integrity of the product that count.

Matters.

MYTH: Generic options almost always exist.

FACT: About 55 percent of prescription drug expenditure is for single-source drugs. This means, of course, that for nearly 45 percent of such expenditure, a generic prescribing option is available.

MYTH: Generic prescriptions are filled with expensive generics, thus saving consumers large sums of money.

FACT: Market data show that you invariably prescribe—and pharmacists dispense—both brand and generically labeled products from the same well-known and trusted sources, in the best interests of patients. In most cases the patient receives the same proven brand product. Savings from voluntary mandated generic prescribing are grossly exaggerated.

MYTH: Drugs account for a major portion of the rise in health care costs.

FACT: Drugs represent a very small part of such costs. The amount of the health care dollar spent for prescription drugs was about 12 cents in 1967; today it is about 8 cents. And you as a physician are most conscious of how drug therapy can cut hospitalization, avert surgery, reduce office visits and keep patients on the job.

MYTH: Government intrusions into the marketplace will save tax money.

FACT: Government schemes always cost the taxpayer something, and the costs often exceed the benefits. Certainly, any federal “help,” such as lists of wholesale drug prices sent to all physicians and pharmacists, will be no exception. Just think of the expense of keeping them current! Moreover, wholesale prices are poor guides to actual transaction prices and even worse guides to retail prices.

The PMA Position

We believe your freedom to prescribe, either by generic or brand name, should be totally unabridged. Otherwise, your prescribing prerogatives and your relationships with patients will be seriously impaired.

The maker does matter

After the myths about price and equivalency have been shattered, one fact stands out more clearly than ever: *The maker does matter.* As always, your best guide to drug therapy for your patients is to select products—both brands and generics—from manufacturers with credentials and performance records you have come to respect.



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

OATH OF HIPPOCRATES

I swear by Apollo the physician, and Aesculapius, and Health, and All-heal, and all the gods and goddesses, that, according to my ability and judgment, I will keep this Oath and this stipulation—to reckon him who taught me this Art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required; to look upon his offspring in the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the Art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to any one if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my Art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and, further, from the seduction of females or males, of free-men and slaves. Whatever, in connection with my professional practice or not, in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this Oath unviolated, may it be granted to me to enjoy life and the practice of the art, respected by all men, in all times! But should I trespass and violate this Oath, may the reverse be my lot!

MEDICAL EQUIPMENT NEEDS LOVING CARE TOO

centrifuges; autoclaves; electrocardiographs; scissors; spectrophotometers; otoscopes; ophthalmoscopes; stethoscopes; ultrasonic, short wave and microwave diathermies; electronic and manual sphygmomanometers; suction machines; microscopes; electroencephalographs; traction machines; operating tables; manual and electric wheelchairs; beds; examining tables; operating lights; examining lights; electrosurgical units; isolated power systems; telemetry patient monitoring systems; blood analyzers; fetal monitors; defibrillators; muscle stimulators; surgical equipment and instruments of all types; & more!

sharpening
straightening
repair
calibration
safety inspection
preventive maintenance

FOR SERVICE,
SEND EQUIPMENT TO:
QUESTIONS?
CALL (913) 582-4642
COLLECT!

HOSPITAL
INSTRUMENT
SERVICE CO.

201 West Railroad Avenue
Silver Lake, Kansas 66539

SERVING MEDICAL DEVICE MAINTENANCE NEEDS



THE MENNINGER FOUNDATION

Continuing Medical Education

Infant Psychiatry: The New Frontier: October 4-5, 1979. This workshop will provide a review and update of the most recent findings concerning the psychological issues as they relate to the prenatal period and parenting, the birthing process and the first months of life.

Moral Development and Its Failures: October 18-19, 1979. The apparent increase in the number of Americans showing inadequacies of conscience and understanding the development of morality in individuals will be addressed.

Psychopolitics and the Legislative Process: November 25-26, 1979.

CME Credit Available.

Contact: June Housholder, Division of Continuing Education, The Menninger Foundation, Box 829, Topeka, Kansas 66601. 913/234-9566, ext. 3685.

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	(913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission ..	(913) 362-4040
Roy Neil, M.D., Hays	(913) 628-3215
George M. Penn, M.D., Topeka	(913) 234-9566
Ivan Rhodes, M.D., Wichita	(316) 685-1291
Alex Scott, M.D., Junction City	(913) 238-2518
Max Teare, M.D., Garden City	(316) 276-7689
Virginia L. Tucker, M.D., Lawrence	(913) 843-3750
Kermit Wedel, M.D., Minneapolis	(913) 392-2144
 Kansas Medical Society, Topeka	 (913) 235-2383/235-3619

KMS Impaired Physician Program

Statement of Purpose

We believe that the problem of impaired professional performance among physicians is the responsibility of the medical profession, requiring us to deal with such physicians unequivocally, fully, and compassionately with all appropriate means at our disposal. To meet this need, we recommend that a committee be established along with a comprehensive action program.

The purpose of the Committee for the Impaired Physician Program is to:

1. Establish a statewide non-coercive program for locating, contacting, and offering rehabilitative help to physicians who have become professionally impaired to varying degrees because of alcoholism, other drug dependence, mental, physical and aging problems, and/or medical incompetence.

2. Function as a peer review organization.

3. Continue to work in liaison with the State Board of Healing Arts as the formal agency with the legal authority to deal with the impaired physician.

4. Establish programs of education and prevention concerned with alcoholism, other drug dependence, mental, physical and aging problems, and/or medical incompetence.

General Principles

Regarding the impaired physician, the Kansas Medical Society subscribes to the following guiding principles:

1. We are motivated in this area by humanitarian concern for the public and the impaired physician and his family.

2. We recognize that alcoholism, other drug dependence, mental, physical and aging problems, and/or medical incompetence represent forms of physician impairment that may be ignored or untreated.

3. We recognize that most alcoholism, other drug dependence, mental, physical and aging problems and/or medical incompetence are treatable conditions.

4. As practitioners of the healing arts, we, more than any other group, should favor treatment and/or rehabilitation of our impaired colleagues above any other alternative.

5. We encourage all impaired physicians to seek help and cooperate in treatment by all means at the disposal of the Kansas Medical Society.

6. We favor the *earliest possible* intervention in cases of physician impairment while personal, financial, mental, and physical resources are intact and minimum damage has been done to professional reputation or to the public.

7. All Kansas Medical Society action taken on behalf of the impaired physician will be done in such a manner as to preserve, unimpaired, the physician's right to continue practice without restriction or stigma upon recovery or remission.

8. All actions taken in the area of impaired physicians by the Kansas Medical Society are intended in the best interest of the physician and the public.

9. Referral to the State Board of Healing Arts for sanctions will be considered only when the impaired physician's actions endanger the public or himself and he repeatedly refuses assistance. When a referral is made to the Kansas State Board of Healing Arts by the Committee for the Impaired Physician Program, the State Board of Healing Arts will act to suspend the license of the physician in question according to the laws governing such licensure. Any temporary suspension or limitation order would take effect when served in person on the licensee.

Structure

- I. The Impaired Physician Program of the Kansas Medical Society will encompass the entire State of Kansas and be administered by the Kansas Medical Society. Existing mechanisms on a local level will be integrated and utilized by the statewide program, but the main impetus for continuing the program must come from the state society.

- II. There will be established two committees: the Committee for the Impaired Physician Program and the Physician Contact/Support Committee.

- A. *The Committee for the Impaired Physician Program:* This Committee will consist of ten (10) physicians who are knowledgeable and vitally interested in the subject of physician impairment. Additional members may be added at the discretion of the Committee for a designated length of time.

Appointed terms of adequate length should be established to ensure continuity; additionally, the appointments should be on a rotating basis. The Committee should be established as a standing committee of the Executive Committee of The Kansas Medical Society and accountable to the executive committee.

The Committee for the Impaired Physician Program will be responsible to:

1. Broadly publicize the Impaired Physician Program and direct an educational effort to physicians and their families, hospital staffs, county medical societies, auxiliary, and others to communicate the general principles of the program and solicit cooperation;

2. Establish a registry of the best appropriate resources and therapists in the areas of alcoholism, other drug dependence, mental health, geriatrics, and/or medical incompetence. This registry will be continually updated as necessary and will serve as the basis for designating intervention teams;

3. Supply current factual information concerning these conditions and be able to make knowledgeable referrals for effective treatment.

4. Confirm complaints of physician impairment and then refer to a Contact/Support team for motivation into voluntary treatment;

5. Evaluate the quality and efficiency of services rendered by physicians referred to the Committee for the Impaired Physician Program;

6. Recommend overall policy and develop guidelines regarding the implementation and maintenance of the Impaired Physician Program;

7. Establish criteria for participating as a Contact/Support team member and be responsible for quality control of this membership;

8. Require follow-up information to be provided by the Contact/Support teams to determine the current status of the impaired physician who has begun treatment;

9. Conduct routine administrative functions including fiscal management and recommendation of needed budget;

10. Make recommendations to the State Board of Healing Arts regarding any impaired physician when a majority of the Committee agrees that the reasonable efforts of the Contact/Support teams have failed to produce an acceptable degree of rehabilitation.

B. *Physician Contact/Support Committee:* There will be established a larger group from which Contact/Support team members are drawn. The names of these people should be maintained by the Committee for the Impaired Physician Program in a resource registry. Contact/Support team members should be drawn from all areas of the state, should

have expertise in the areas of alcoholism, other drug dependence, mental health, geriatrics and/or medical incompetence and some should themselves be rehabilitated impaired physicians. When the Committee for the Impaired Physician Program deems it appropriate, a Contact/Support team will be selected in the following manner: Where evidence exists that a physician's ability to function professionally is impaired, the Committee will select a Contact/Support team. At least one member of this team will be a physician from the resource registry. The registry may be the source of the entire team. No member of the team will be involved in the ongoing treatment process.

It is often advisable that physician Contact/Support members be drawn from a locale outside of the geographic area of the impaired physician's practice.

It will be the responsibility of the Contact/Support team to:

1. Meet with family members and others in appropriate settings, with the impaired physician and present him with documentation that impairment exists; and to express the concerns of his colleagues and family;

2. Encourage the impaired physician to seek help voluntarily, or assist him into active treatment;

3. Maintain contact with the impaired physician to support and encourage his cooperation in the treatment and in the case of the alcohol and/or other drug dependent physician for active participation in Alcoholics Anonymous; and encourage membership in International Doctors in Alcoholics Anonymous (IDAA), and the American Medical Society on Alcoholism;

4. Make every effort to assist the impaired physician to continue his professional duties insofar as he is considered able to do so by the physician in charge of treatment;

5. Attempt to plan for, or to help, provide for opportunities for the impaired physician to continue limited duties, supervised if necessary, as thought reasonable by his treating physician;

6. In cases where the impaired physician has discontinued or limited his work, aid him to return to appropriate work duties as soon as possible;

7. Where there is a failure to seek treatment and/or failure to cooperate after a reasonable period of time, this fact will be reported to the Chairman of the Committee for the Impaired Physician Program.

III. Referral calls concerning any alleged impaired physician shall be made to the Kansas Medical Society Headquarters in Topeka. Call collect

(913) 235-2383. This number will be answered 24 hours a day.

A person reporting an alleged impaired physician will be asked: (1) the name of the alleged impaired physician; and (2) the general nature of the complaint. The caller will be asked to identify himself if he wishes, but will be assured that his complaint is confidential and that his name will not be revealed to the alleged impaired physician without the caller's knowledge and consent.

Following receipt of any call, the Kansas Medical Society office staff will contact the Chairman of the Committee for the Impaired Physician Program, or his designee, and report the basic information obtained from the complainant. The Chairman or his designee will telephone an appropriate member of the county medical society in the alleged impaired physician's Council district to begin the process of verification and/or assessment of the need to pursue the complaint with a Contact/Support team.

A. *Voluntary or Self-referral*: When the impaired physician contacts the Kansas Medical Society program directly, the following steps will take place:

1. The appropriate staff member receiving the call contacts the Chairman or his designee of the Committee for the Impaired Physician Program;

2. The Chairman or his designee arranges for a member of this Committee to contact the impaired physician to inquire about the nature of his illness or problem, and to discuss with the physician his willingness to undertake appropriate treatment;

3. The Chairman or his designee then assigns a Contact/Support team who will become advocate for the physician as he undergoes treatment. The steps outlined under the "responsibilities of the Contact/Support team," (points 3-7), will then go into effect.

B. *Involuntary or Other Means of Referral*: The Kansas Medical Society will accept from any responsible source (physician peer, hospital administrator, patient, physician's spouse, etc.) information indicating that a physician may be impaired. *Specific details regarding the physician involved will not be sought or accepted at the time of the original call.* In such a case the following steps will take place:

1. The appropriate staff member receiving the call contacts the Chairman of the Committee for the Impaired Physician Program, or his designee; and reports: (1) the name of the alleged impaired physician; (2) the general nature of the complaint; and (3) the caller's name and telephone number if volunteered by the caller.

2. The chairman or his designee contacts an appropriate member(s) of the county medical society in the alleged impaired physician's council district to

inquire about the alleged impaired physician along with the specific reasons for the alleged impairment.

3. The Committee member then evaluates, with the assistance of other members of the Committee as he deems necessary, the information, making as much use as possible of firsthand information concerning the specific incidents of the demonstrated impairment. All such information gathered by the Committee for the Impaired Physician Program will be kept confidential.

4. Having determined sufficient cause exists to justify contacting the physician thought to be impaired, the Committee by direction of its Chairman or his designee will select a Contact/Support team. Steps 1-7 under "responsibilities of the Contact/Support team," then go into effect.

C. *Conclusion of Intervention*. When a physician referred to the Kansas Medical Society is considered rehabilitated, and restored to medical practice, the Kansas Medical Society intervention is concluded. This may require a period of anywhere from 2 to 3 or more years. All records are then destroyed.

When all efforts fail and the degree of impairment of the physician's professional performance threatens the public trust, the matter will be reported to the Kansas State Board of Healing Arts by the Chairman of the Committee for the Impaired Physician Program.

Legal Issues

1. *Immunity from Liability*: Exemption from liability for all those who are actively involved in the program, including those who in good faith report cases of physician impairment, the Kansas Medical Society committees for the Impaired Physician Program and the Contact/Support Teams, the Kansas Medical Society itself, both generally and including the Executive Committee of The Kansas Medical Society, as well as any of the committees, staff, counsels, or commissions of this Society otherwise involved in the program, is provided through the following mechanisms:

KSA 65-2898 and KSA 65-4909 provide immunity by relieving any person reporting to the State Board of Healing Arts and other licensing boards from civil liability for reporting any alleged incidents of malpractice or the qualifications, fitness or character of persons licensed or registered by such boards, if such report is made under oath and in good faith.

The bills also provide that any state, regional, or local association composed of persons licensed to practice the healing arts, or other health care providers, or any individual members or committees

thereof which investigate and communicate information pertaining to alleged malpractice incidents or the qualifications, fitness or character of any licensee or registrant to the appropriate licensing board, shall be immune from liability in civil actions if the investigation and communication were made in good faith and did not represent as true any matter not reasonably believed to be true. On this basis, members of the Committee for the Impaired Physician Program and the physician Contact/Support Committee, as well as others reporting, are granted immunity, so long as the conditions of the statute are met.

2. *Confidentiality*: The purpose of the Kansas Medical Society program for impaired physicians is to offer early intervention and help for impaired physicians, at the same time performing a peer review function by evaluating the quality and efficiency of services rendered by physicians referred to the Committee for the Impaired Physician Program. The entire program should be carried out with minimal disruption of the physician's practice, and no harm to his reputation. For these reasons, all information gathered on the physician in question must be held in the strictest confidence and any investigation of reports carried out discreetly. Proper records must be maintained but only in strictest confidence and protection.

3. *Relationship to the State Board of Healing Arts*: The Kansas Legislature enacted HB-2008 in 1975, which grants the Healing Arts Board the authority to utilize the AMA Model Act on the impaired physician. This act was drafted by AMA in 1974, and allows each individual state board considerable latitude and authority to act in the area of physician impairment. It is clear that the trend seems to be in the direction of closer cooperation between state medical associations and licensing bodies along the entire continuum of detection, diagnosis, treatment and rehabilitation.

HB-3109, enacted in 1978, grants the Healing

Arts Board authority for temporary suspension and limitation of license of any licensee, without notice or hearing, if the Board determines that there is cause to believe that grounds exist for such revocation, suspension or limitation, and that the licensee's continuation in practice would constitute an imminent danger to the public health and safety. Any temporary suspension or limitation order would take effect when served in person on the licensee.

The Board will institute proceedings for a hearing simultaneously with the Board's action to limit or suspend the license temporarily. Such hearing is to be held within fifteen (15) days from the date of the temporary limitation or suspension unless a continuance is requested by the licensee.

In no case shall a temporary suspension or temporary limitation of a license be in effect for a period of time in excess of 90 days. At the end of such period of time, the licensee shall be reinstated to full licensure unless the Board has revoked, suspended or limited the license.

With the support and cooperation of the State Board of Healing Arts, the Kansas Medical Society's program includes non-member physicians. The alternative for the impaired non-member would be either access to the Kansas Medical Society's mechanism or in the event of failure to accept this help, referral to the State Board's formal mechanism. With the State Board of Healing Arts in the background as the "court of last resort," the Kansas Medical Society's efforts should be more effective in the great majority of instances of physician impairment.

For further information contact

**THE KANSAS MEDICAL SOCIETY
1300 Topeka Ave., Topeka, KS 66612
913-235-2383**

Principles of Medical Ethics of the American Medical Association

PREAMBLE

These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

Section 1

The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

Section 2

Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

Section 3

A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

Section 4

The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

Section 5

A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services

only after giving adequate notice. He should not solicit patients.

Section 6

A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

Section 7

In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

Section 8

A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

Section 9

A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

Section 10

The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

Kansas Law

A Review of Laws Requiring Report or Notification by Physicians to Certain Authorities

Right to Die

A physician is required to include in a patient's medical records any declaration made by the patient directing the withholding or withdrawal of life-sustaining procedures or a revocation of such declaration. If a physician receives a revocation, he or she must also record the date, time, and place of such receipt in the patient's medical records. When a patient who has made such a declaration is diagnosed as terminally ill, the physician must take the necessary steps to provide for written certification and confirmation of the patient's terminal condition so that the patient may be deemed a qualified patient under this act.

1979 Kan. Sess. Laws, S.B. 99

Crimes Against the Public Safety

A physician is required to report particular types of wounds to the office of the chief of police of the city or the office of the sheriff of the county in which treatment takes place. Wounds that must be reported include any bullet wound, gunshot wound, powder burn, or other injury arising from or caused by the discharge of a firearm, and any wound that is likely to result in death and that is apparently inflicted by a knife, ice pick, or other sharp or pointed instrument. This does not require the disclosure of communications between the physician and patient — only the fact that a wound as described above was treated is required to be reported. Unlawful failure to report a wound is a class C misdemeanor, punishable by a definite term of confinement in the county jail which shall be fixed by the court and which shall not exceed one month [Kan. Stat. Ann. §21-4502 (c) (Supp.) 1978)].

K.S.A. §21-4213 (1974)

Child Abuse

Any physician having reason to suspect that a child has had injury or injuries inflicted upon him or her as a result of physical or mental abuse or neglect, shall report the matter promptly to the district court of the county in which treatment is given. Such report may be made orally by telephone or otherwise and shall be followed by a written report if requested. When medical examination or treatment is provided by a staff member of a medical care facility, such

staff member shall immediately notify the person in charge of the institution who shall make such a report in writing. When a report is required to be written, it shall contain, if known, the names and addresses of the child and his or her parents or other persons responsible for his or her care, the child's age, the nature and extent of the child's injuries (including any evidence of previous injuries), and any other information the physician believes might be helpful in establishing the cause of injuries and the identity of the person(s) allegedly responsible therefor.

K.S.A. §38-717 (Supp. 1978)

Visually Handicapped Persons

Every attending or consulting physician shall report in writing to the state board of health the name, age, and residence of all patients or persons who are handicapped in vision, and who come within the definition of "the blind" in §39-702 (not only those who are totally and permanently devoid of vision, but also those persons whose vision is so defective as to prevent the performance of ordinary activities for which eyesight is essential). Such report shall be made within 30 days after a first consultation of the physician and the blind person and shall be on a form prescribed by the State Department of Health and Environment. The physician may omit such registration upon the objection of adult blind.

K.S.A. §39-739 (1973)

Vital Statistics

The Secretary of Health and Environment shall prepare the blank forms necessary for obtaining and preserving records of births, deaths, and registration of forms of disease prevalent in the state, and forward them to the health officers of local boards as may be required by physicians, assessors, local boards, and others whose duty it is to gather information in relation to the vital statistics of the state.

K.S.A. §65-102 (Supp. 1978)

Infectious or Contagious Diseases

Whenever any person licensed to practice the healing arts knows or has information indicating that a person is suffering from or has died from an infectious or contagious disease, such knowledge or in-

formation shall be reported immediately to the county or joint board of health or the local health officer, together with the name and address of the person who is suspected of having the infectious or contagious disease, or the name and former address of the deceased individual who had or was suspected of having such a disease. "Infectious or contagious disease" is defined in §65-128(b) as "any disease designated by the Secretary of Health and Environment as an infectious or contagious disease."

K.S.A. §65-118(a) (Supp. 1978)

Serological Test for Syphilis

Each physician attending a pregnant woman in this state during gestation shall, with the consent of the patient, take or cause to be taken a sample of blood within 14 days after diagnosis of same is made, and shall submit such sample for standard serological test for syphilis to either a private laboratory or to the office of laboratory services in Topeka or to laboratories cooperating with the Department of Health and Environment. The result of all laboratory tests shall be kept confidential and shall be reported on the standard forms prescribed and furnished by the secretary of health and environment.

K.S.A. §65-153f (Supp. 1978)

Congenital Hypothyroidism and PKU

Every physician having knowledge of a case of congenital hypothyroidism or phenylketonuria in one of such physician's own patients shall report the case to the Secretary of Health and Environment on forms provided by the secretary.

K.S.A. §65-183 (Supp. 1978)

Laetrile

A physician shall maintain records of his or her purchases of amygdalin (laetrile) to include, but not be limited to, the date of purchase, sale or disposal of such substance by the physician.

K.S.A. §65-6b11 (Supp. 1978)

Birth Certificates

When a birth occurs in an institution, the person in charge of the institution or his designated representative shall obtain the personal data, prepare the certificate, secure the signatures required by the certificate and file it with the local registrar. The physician in attendance shall certify to the facts of birth and provide the medical information required by the certificate, within five days after the birth. When a birth occurs outside an institution, the certificate shall be prepared and filed by the physician in attendance at or immediately after the birth (if a physician was in attendance).

K.S.A. §65-2409 (1972)

Unethical and Illegal Practitioners

Every physician in this state, including members of the state Board of Healing Arts, shall furnish the board such evidence as he or she may have relative to any alleged violation of professional duties or ethics which the board is investigating. He or she shall also report to the board the name of every person without a license that he or she has reason to believe is engaged in practicing the healing arts in this state.

K.S.A. §65-2864 (1972)

Venereal Diseases

All examinations and treatment of a person under 18 years of age, when such person is suspected of having a venereal disease or contact with anyone having a venereal disease, may be performed without the consent of, or notification to, the parent, parents, guardian or any other person having custody of such person. Any physician examining or treating such person for venereal disease may, but shall not be obligated to, in accord with his opinion of what will be most beneficial for such person, inform the spouse, parent, custodian, guardian or fiancé of such person as to the treatment given or needed without the consent of such person. Such informing shall not constitute libel or slander or a violation of the right of privacy or privilege or otherwise subject the physician to any liability whatsoever.

K.S.A. §65-2892 (1972)

Good Samaritan Act

K.S.A. 65-2891. Emergency care or assistance at scene of accident by certain persons, including treatment of minors; liability in damages; emergency care or assistance to minors engaging in sports without parental consent; damage liability; temporary emergency care or assistance during emergency within a hospital; liability; or ordinary standards of care and rules of negligence applicable to emergency care and treatment.

(a) Any physician or any other practitioner of the healing arts, or dentist licensed to practice under the laws of this state, or any other state, or any registered professional nurse, or any physicians' assistant who has successfully completed an American medical association approved training program and has successfully completed the national board examination for physicians' assistants of the American board of medical examiners or any person who has successfully completed an approved emergency service program as defined by K.S.A. 1975 Supp. 65-2891a, who in good faith renders emergency care or assistance at the scene of an emergency or accident including treatment of a minor without first obtaining the consent of the parent or guardian of such minor shall not be liable for any civil damages for acts or omissions other than damages occasioned by gross negligence or by willful or wanton acts or omissions by such person in rendering such emergency care.

(b) Any physician, registered professional nurse or dentist licensed under the laws of this state, or of any other state, to practice medicine, professional nursing, dentistry or surgery, or any physicians' assistant who has successfully completed an American medical association approved training program and has successfully completed the national board examination for physicians' assistants of the American board of medical examiners, may, in good faith render emergency care or assistance, without compensation, to any minor requiring such care or assistance as a result of having engaged in competitive sports, without first obtaining the consent of the

parent or guardian of such minor. Such physician, registered professional nurse, dentist or physicians' assistant shall not be liable for any civil damages other than damages occasioned by gross negligence or by willful or wanton acts or omissions by such person in rendering such emergency care.

(c) Any physician, registered professional nurse or dentist licensed under the laws of this state or any other state to practice medicine, professional nursing, dentistry or surgery, or any physicians' assistant who has successfully completed an American medical association approved training program and has successfully completed the national board examination for physicians' assistants of the American board of medical examiners, may in good faith render emergency care or assistance during an emergency which occurs within a hospital or elsewhere, with or without compensation, until such time as the physician employed by the patient or by his or her family or by his or her guardian assumes responsibility for such patient's professional care. The physician, registered professional nurse, dentist or physicians' assistant rendering such emergency care shall not be held liable for any civil damages other than damages occasioned by negligence.

(d) Any provision herein contained notwithstanding, the ordinary standards of care and rules of negligence shall apply in those cases wherein emergency care and assistance is rendered in any physician's or dentist's office, clinic, emergency room or hospital with or without compensation. [K.S.A. 65-2891; L. 1973, ch. 252, §1; L. 1975, ch. 326, §1; July 1.]

K.S.A. 65-2891a. Same; emergency service program defined. As used in this act, emergency service program means a program of instruction, approved by the university of Kansas medical center, consisting of eighty (80) clock hours or the equivalent thereof, of preliminary emergency medical care and at least eight (8) clock hours annually of supplemental instruction.

Performance of Autopsy

65-2893. Autopsies; performance of; authorization. In any case of death wherein notification of the coroner is not required by K.S.A. 19-1031 and amendments thereto, or any case in which the coroner does not elect to perform an autopsy, an autopsy may be performed upon the body of a deceased person by a physician or surgeon when so authorized, in writing by the decedent during his lifetime. Additionally, unless the physician or surgeon has knowledge that contrary directions have been given by the decedent, the following persons in the order of priority stated, may consent to the performance of an autopsy: (1) The spouse, if one survives and if not incapacitated. If no spouse survives or if the spouse is incapacitated;

- (2) an adult child;
- (3) either parent;

- (4) an adult brother or sister;
- (5) the guardian of the decedent at the time of his death;
- (6) any other person or agency authorized or under obligation to dispose of the body.

If there is no surviving spouse and an adult child is not immediately available at the time of death, the autopsy may be authorized by either parent; if a parent is not immediately available, it may be authorized by any adult brother or sister: *Provided*, That such autopsy shall not be performed under a consent given as required by a member of the class listed in (2), (3) or (4) above, if, before such autopsy is performed, any member of the class shall object to the performance of such autopsy in writing to the physician or surgeon by whom the autopsy is to be performed.

Treatment of Minors

65-2892. Examination and treatment of persons under 18 for venereal disease; liability. Any physician, upon consultation by any person under eighteen (18) years of age as a patient, may, with the consent of such person who is hereby granted the right of giving such consent, make a diagnostic examination for venereal disease and prescribe for and treat such person for venereal disease including prophylactic treatment for exposure to venereal disease whenever such person is suspected of having a venereal disease or contact with anyone having a venereal disease. All such examinations and treatment may be performed without the consent of, or notification to, the parent, parents, guardian or any other person having custody of such person. Any physician examining or treating such person for venereal disease may, but shall not be obligated to, in accord with his opinion of what will be most beneficial for such person, inform the spouse, parent, custodian, guardian or fiancé of such person as to the treatment given or needed without the consent of such person. Such informing shall not constitute libel or slander or a violation of the right of privacy or privilege or otherwise subject the physician to any liability whatsoever. In any such case, the physician shall incur no civil or criminal liability by reason of having made such diagnostic examination or rendered such treatment, but such immunity shall not

apply to any negligent acts or omissions. The physician shall incur no civil or criminal liability by reason of any adverse reaction to medication administered, provided reasonable care has been taken to elicit from such person under eighteen (18) years of age any history of sensitivity or previous adverse reaction to the medication.

65-2892a. Examination and treatment of minors for drug abuse, misuse or addiction; liability. Any physician licensed to practice the healing arts in Kansas, upon consultation with any minor as a patient, may examine and treat such minor for drug abuse, misuse or addiction if such physician has secured the prior consent of such minor to the examination and treatment. All such examinations and treatment may be performed without the consent of any parent, guardian or other person having custody of such minor, and all minors are hereby granted the right to give consent to such examination and treatment. In any such case, the physician shall incur no civil or criminal liability by reason of having made such diagnostic examination or rendered such treatment, but such immunity shall not apply to any negligent acts or omissions. The physician shall incur no civil or criminal liability by reason of any adverse reaction to medication administered, if reasonable care has been taken.

Legal Definition of Death

K.S.A. 77-202. Definition of Death.

A person will be considered medically and legally dead if, in the opinion of a physician, based on ordinary standards of medical practice, there is the absence of spontaneous respiratory and cardiac function and, because of the disease or condition which caused, directly or indirectly, these functions to cease, or because of the passage of time since these functions ceased, attempts at resuscitation are considered hopeless; and, in this event, death will have occurred at the time these functions ceased; or

A person will be considered medically and legally dead if, in the opinion of a physician, based on ordinary standards of medical practice, there is the

absence of spontaneous brain function; and if based on ordinary standards of medical practice, during reasonable attempts to either maintain or restore spontaneous circulatory or respiratory function in the absence of aforesaid brain function, it appears that further attempts at resuscitation or supportive maintenance will not succeed, death will have occurred at the time when these conditions first coincide. Death is to be pronounced before artificial means of supporting respiratory and circulatory function are terminated and before any vital organ is removed for purposes of transplantation.

These alternative definitions of death are to be utilized for all purposes in this state, including the trials of civil and criminal cases, any laws to the contrary notwithstanding.

★
Specialized Service
IN
PROFESSIONAL LIABILITY INSURANCE
is a high mark of distinction
Since 1899
~~THE~~
MEDICAL PROTECTIVE COMPANY
FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative
Suite 202-A, 6600 West 95th Street, Overland Park, Kansas
P.O. Box 6101, Leawood, Kansas 66206
Telephone: (Area Code 913) 381-4222

Continuing Medical Education

The 1976 Kansas Legislature enacted a law requiring continuing medical education as a requisite to relicensure in Kansas. HB-2723 provides that, "From and after July 1, 1978, the Kansas State Board of Healing Arts shall require every licensee to submit with the renewal application evidence of satisfactory completion of a program of continuing education required by the Board." Physicians not in the active practice of the healing arts in the State of Kansas may be exempted from the continuing medical education requirements for relicensure by signing an affidavit furnished by the Kansas State Board of Healing Arts. The following is a description of the CME requirements established by the Board, and an explanation of how to comply with the requirements.

As a basic requirement, the Board adopted the CME requirements of the Kansas Medical Society, which is the attainment of the American Medical Association "Physician's Recognition Award." The basic criteria for the PRA is 150 hours of educational experience over a three-year period. The educational activities are described in six separate categories. Below is a brief description of each category and the maximum number of hours that can be obtained in each category:

	<i>Credit Hours Limit</i>
Category 1 — CME activities with accredited sponsorship (60 hours required)	no limit
Category 2 — CME activities with non-accredited sponsorship	45 hrs.
Category 3 — Medical teaching	45 hrs.
Category 4 — Papers, publications, books, exhibits	40 hrs.
Category 5 — Non-supervised individual CME activities	45 hrs.
Category 6 — Other meritorious learning experiences	45 hrs.

Completion of AMA-PRA satisfies the requirement established by the Board. Because relicensure is on a yearly basis, and the PRA is on a three-year basis, a physician need only have a valid PRA in effect to be in compliance with the requirements of the Board.

Additionally, completion of the CME certification programs of any of the following organizations also constitutes compliance with the requirements of the Board:

- American Academy of Dermatology
- American Association of Neurological Surgeons
- American College of Emergency Physicians
- American College of Radiology
- American Society of Colon and Rectal Surgeons
- American Academy of Family Physicians
- American College of Obstetricians and Gynecologists
- College of American Pathologists/American Society of Clinical Pathologists
- American Psychiatric Association

Any other specialty organization CME certification programs subsequently recognized by the AMA.

If you satisfy the requirements of any of the above organizations, you need *not* apply for the "Physician's Recognition Award." Each specialty organization will notify the Kansas Medical Society of your certification, and the Kansas Medical Society will in turn notify the Board that you have satisfactorily completed your requirements.

If you do not qualify for the specialty organization programs listed above, you must apply directly to the AMA for the "Physician's Recognition Award." Upon receipt of the award, the AMA will notify the Kansas Medical Society that you have completed the requirement.

Questions concerning CME requirement can be directed to the Board or the Kansas Medical Society. The addresses of each are as follows:

The Kansas State Board of Healing Arts
503 Kansas Avenue
Topeka, KS 66603
Telephone: (913) 296-7413

The Kansas Medical Society
1300 Topeka Boulevard
Topeka, KS 66612
Telephone: (913) 235-2383

Each individual physician is responsible for recording his own hours of attendance at postgraduate courses. The credit hours should be recorded on the AMA Physician's Recognition Award application form when 150 hours are accumulated. The application form should then be mailed directly to the AMA, 535 North Dearborn, Chicago, IL 60610.

V-Cillin K[®]

penicillin V potassium

is the most
widely prescribed
brand of oral penicillin



Tablets
125, 250, and 500 mg*
Oral Solution
125 and 250 mg*/5 ml

V-Cillin K[®] penicillin V potassium

Description: V-Cillin K is the potassium salt of penicillin V. This chemically improved form combines acid stability with immediate solubility and rapid absorption.

Indications: For the treatment of mild to moderately severe pneumococcal respiratory tract infections and mild staphylococcal skin and soft-tissue infections that are sensitive to penicillin G. See the package literature for other indications.

Contraindication: Previous hypersensitivity to penicillin.

Warnings: Serious, occasionally fatal, anaphylactoid reactions have been reported. Some patients with penicillin hypersensitivity have had severe reactions to a cephalosporin; inquire about penicillin, cephalosporin, or other allergies

before treatment. If an allergic reaction occurs, discontinue the drug and treat with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin.

(102175)

*Equivalent to penicillin V.

Additional information available to the profession on request.



Eli Lilly and Company
Indianapolis, Indiana 46206

900416

9.21% Single Premium Deferred Annuity 8.02%

Before you buy municipal or corporate bonds or certificates of deposit . . .
See what a single premium deferred annuity can do for you.

9.21%

Current Annual Tax Deferred Rate Adjustable Quarterly

8.02%

Current Annual Tax Deferred Rate Adjustable Annually

Tax Deferred Income

* Interest Compounds Free of Any Income Tax
No Sales Charge

** Guaranteed Return of Principal

** Guaranteed Interest (maximum & minimum)

** Guaranteed Income You Cannot Outlive

Avoidance of Probate (4% - 8% depending on state)

Sound Collateral

Increase Spendable Income

** Guaranteed by total resources of major insurance companies.

MINIMUM DEPOSIT: \$1,500.00

A minimal redemption charge on some contracts.

*TAX DEFERRED VS. TAXABLE INTEREST ON \$10,000 COMPOUNDED OVER 30 YEARS

No. of Years	\$10,000 Savings & Loan Accounts at 6% Interest (Interest taxed as accrued)		\$10,000 ANPlan Annuity (Interest accumulates without current tax)
	60% Tax Bracket	30% Tax Bracket	@7% ¹
5	\$11,693	\$12,284	\$14,026
10	13,439	15,090	19,672
20	18,061	22,770	38,697
30	24,273	34,358	76,123

¹Assumes level 7% interest throughout life of contract

For more information contact:

MARK DOODY
2044 Fillmore
Topeka, Kansas 66604
Phone: 913/234-8380

Name _____

Address _____

City _____

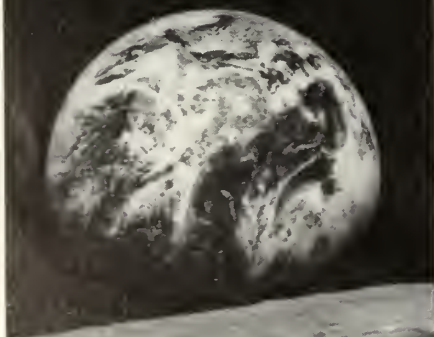
State _____ Zip _____

Phone _____

ALDOMET[®]

(METHYLDOPA | MSD)

TABLETS: 500 mg, 250 mg, and 125 mg



MSD
MERCK
SHARP
DOHME

Copyright © 1979 by Merck & Co., Inc.

Tenuate[®] C
(diethylpropion hydrochloride NF)

Tenuate Dospan[®]
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma, agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect, rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle, the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg tablet three times daily, one hour before meals, and in the evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg tablet daily, swallowed whole, in the morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSEAGE: Manifestations of acute overdose include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine[®]) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdose.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell[®]

References: 1. Citations available on request—Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs. Florence, Italy, Jan. 20-21, 1977.

Merrell

6-3921 (1587A)

**Overweight may not always be simple...
complications can develop.*
Complicated or not...**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict appetite control and a successful program of weight reduction may tend to diminish the incidence or severity of the complications in some patients. Diethylpropion hydrochloride has been reported useful in such patients and while it is not suggested that Tenuate itself in any way reduces the complications of overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. **Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.**

In uncomplicated overweight.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

*Studies have shown that obesity is associated with an increased incidence of hypertension, symptomatic heart disease, adult-onset diabetes, and other diseases.

Merrell



For prescribing information see opposite page.

new
600 mg tablets
Motrin[®]
ibuprofen, Upjohn

More convenient for
some of your patients.

Now there are three
Motrin tablet strengths
to choose from—

600 mg, 400 mg, and 300 mg



Upjohn

The Upjohn Company
Kalamazoo, Michigan 49001, U.S.A.

© 1979 The Upjohn Company

J-6999-4

April 1979

Medical School Codes

UNITED STATES

The following is a list of medical schools in the United States and Puerto Rico, existing and extinct, arranged in state order and showing the code number by which each school is designated in the geographical section of this Directory. Existing approved schools are listed in capital letters.

001 Alabama

- 001-02 UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE, BIRMINGHAM
- 001-04 Birmingham Medical College
- 001-06 UNIVERSITY OF SOUTH ALABAMA SCHOOL OF MEDICINE, MOBILE

003 Arizona

- 003-01 UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE, TUCSON

004 Arkansas

- 004-01 UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, LITTLE ROCK
- 004-02 College of Physicians and Surgeons, Little Rock

005 California

- 005-01 Cooper Medical College, San Francisco
- 005-02 UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE, SAN FRANCISCO
- 005-04 California Eclectic Medical College, Los Angeles
- 005-05 Hahnemann Medical College of the Pacific, San Francisco
- 005-06 UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, LOS ANGELES
- 005-07 College of Physicians and Surgeons of San Francisco
- 005-08 Oakland College of Medicine and Surgery
- 005-09 College of Physicians and Surgeons, Los Angeles
- 005-11 STANFORD UNIVERSITY SCHOOL OF MEDICINE, PALO ALTO
- 005-12 LOMA LINDA UNIVERSITY SCHOOL OF MEDICINE, LOMA LINDA—LOS ANGELES
- 005-13 Pacific Medical College, Los Angeles
- 005-14 UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE, LOS ANGELES
- 005-15 UNIVERSITY OF CALIFORNIA COLLEGE OF MEDICINE (CALIFORNIA COLLEGE OF MEDICINE), IRVINE
- 005-16 University of California, Irvine—California College of Medicine
- 005-17 University of California, Irvine—California College of Medicine
- 005-18 UNIVERSITY OF CALIFORNIA—SAN DIEGO, LA JOLLA
- 005-19 UNIVERSITY OF CALIFORNIA, SCHOOL OF MEDICINE, DAVIS
- 005-75 College of Osteopathic Physicians and Surgeons of Los Angeles

007 Colorado

- 007-02 UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, DENVER
- 007-05 DENVER AND GROSS COLLEGE OF MEDICINE

008 Connecticut

- 008-01 YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN
- 008-02 UNIVERSITY OF CONNECTICUT SCHOOL OF MEDICINE, FARMINGTON

010 District of Columbia

- 010-01 GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, WASHINGTON
- 010-02 GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, WASHINGTON
- 010-03 HOWARD UNIVERSITY COLLEGE OF MEDICINE, WASHINGTON

011 Florida

- 011-02 UNIVERSITY OF MIAMI SCHOOL OF MEDICINE, MIAMI
- 011-03 UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE, GAINESVILLE
- 011-04 UNIVERSITY OF SOUTH FLORIDA COLLEGE OF MEDICINE, TAMPA
- 011-05 BASIC MEDICAL SCIENCES PROGRAM, FLORIDA STATE UNIVERSITY, TALLAHASSEE

012 Georgia

- 012-01 MEDICAL COLLEGE OF GEORGIA, AUGUSTA
- 012-05 EMORY UNIVERSITY SCHOOL OF MEDICINE, ATLANTA
- 012-09 Georgia College of Eclectic Medicine and Surgery, Atlanta
- 012-10 Southern Medical College, Atlanta
- 012-11 Atlanta College of Physicians and Surgeons
- 012-12 Atlanta School of Medicine
- 012-18 Hospital Medical College Eclectic, Atlanta
- 012-19 Southern College of Medicine and Surgery, Atlanta
- 012-21 SCHOOL OF MEDICINE AT MOREHOUSE COLLEGE, ATLANTA

014 Hawaii

- 014-01 UNIVERSITY OF HAWAII SCHOOL OF MEDICINE, HONOLULU

016 Illinois

- 016-01 RUSH MEDICAL COLLEGE, CHICAGO
- 016-02 UNIVERSITY OF CHICAGO PRITZKER SCHOOL OF MEDICINE, CHICAGO
- 016-04 The Hahnemann Medical College and Hospital, Chicago
- 016-05 College of Medicine and Surgery, Chicago
- 016-06 NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, CHICAGO
- 016-08 Bennett Medical College, Chicago
- 016-09 Northwestern University Woman's Medical School, Chicago
- 016-10 Chicago Homeopathic Medical College
- 016-11 UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, CHICAGO
- 016-13 Harvey Medical College, Chicago
- 016-14 National Medical University, Chicago
- 016-15 Hering Medical College, Chicago
- 016-16 Jenner Medical College, Chicago
- 016-17 Illinois Medical College, Chicago
- 016-18 Dunham Medical College, Chicago
- 016-19 American Medical Missionary College, Battle Creek, Michigan & Chicago
- 016-22 Chicago College of Medicine and Surgery
- 016-23 Dearborn Medical College, Chicago
- 016-42 CHICAGO MEDICAL SCHOOL UNIVERSITY OF HEALTH SCIENCES, CHICAGO
- 016-43 LOYOLA UNIVERSITY STRITCH SCHOOL OF MEDICINE, MAYWOOD
- 016-44 The General Medical College, Chicago
- 016-45 SOUTHERN ILLINOIS UNIVERSITY SCHOOL OF MEDICINE, SPRINGFIELD
- 016-76 Chicago College of Osteopathy, Chicago

017 Indiana

- 017-05 Physiological Medical College of Indiana, Indianapolis
- 017-08 Medical College of Indiana, Indianapolis
- 017-09 Central College of Physicians and Surgeons, Indianapolis
- 017-17 Eclectic Medical College of Indiana, Indianapolis
- 017-18 Indiana Medical College, School of Medicine of Purdue University, Indianapolis
- 017-20 INDIANA UNIVERSITY SCHOOL OF MEDICINE, INDIANAPOLIS

018 Iowa

- 018-01 College of Physicians and Surgeons, Keokuk
- 018-03 UNIVERSITY OF IOWA COLLEGE OF MEDICINE, IOWA CITY
- 018-04 State University of Iowa College of Homeopathic Medicine, Iowa City
- 018-06 Drake University College of Medicine, Des Moines
- 018-08 Sioux City College of Medicine
- 018-10 Keokuk Medical College, College of Physicians and Surgeons
- 018-75 College of Osteopathic Medicine and Surgery, Des Moines

019 Kansas

- 019-02 UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, KANSAS CITY
- 019-03 Kansas Medical College, Topeka
- 019-04 College of Physicians and Surgeons, Kansas City
- 019-07 Western Eclectic College of Medicine and Surgery, Kansas City

020 Kentucky

- 020-01 Kentucky School of Medicine, Louisville
- 020-02 UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, LOUISVILLE
- 020-04 Louisville Medical College
- 020-05 Hospital College of Medicine, Louisville
- 020-07 Louisville National Medical College
- 020-08 Southwestern Homeopathic Medical College and Hospital, Louisville
- 020-09 Kentucky University Medical Department, Louisville
- 020-11 Louisville and Hospital Medical College
- 020-12 UNIVERSITY OF KENTUCKY COLLEGE OF MEDICINE, LEXINGTON

021 Louisiana

- 021-01 TULANE UNIVERSITY SCHOOL OF MEDICINE, NEW ORLEANS
- 021-04 Flint Medical College of New Orleans University, New Orleans
- 021-05 LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, NEW ORLEANS
- 021-06 LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, SHREVEPORT

022 Maine

- 022-01 Bowdoin Medical School, Brunswick-Portland

023 Maryland

- 023-01 UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, BALTIMORE
- 023-03 College of Physicians and Surgeons of Baltimore
- 023-04 Baltimore Medical College
- 023-05 Woman's Medical College of Baltimore
- 023-06 Baltimore University School of Medicine
- 023-07 JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, BALTIMORE
- 023-08 Atlantic Medical College, Baltimore
- 023-09 Maryland Medical College, Baltimore
- 023-11 Maryland College of Eclectic Medicine and Surgery, Baltimore
- 023-12 UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES, BETHESDA

024 Massachusetts

- 024-01 HARVARD MEDICAL SCHOOL, BOSTON
- 024-05 BOSTON UNIVERSITY SCHOOL OF MEDICINE, BOSTON
- 024-06 College of Physicians and Surgeons, Boston
- 024-07 TUFTS UNIVERSITY SCHOOL OF MEDICINE, BOSTON
- 024-15 Middlesex University School of Medicine, Waltham
- 024-16 UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, WORCESTER
- 024-75 Massachusetts College of Osteopathy, Boston

025 Michigan

- 025-01 UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, ANN ARBOR
- 025-05 University of Michigan Homeopathic Medical School, Ann Arbor
- 025-07 WAYNE STATE UNIVERSITY SCHOOL OF MEDICINE, DETROIT
- 025-08 Michigan College of Medicine and Surgery, Detroit
- 025-12 MICHIGAN STATE UNIVERSITY COLLEGE OF HUMAN MEDICINE, EAST LANSING
- 025-76 Michigan State University College of Osteopathic Medicine, East Lansing

026 Minnesota

- 026-04 UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, MINNEAPOLIS
- 026-05 Minneapolis College of Physicians and Surgeons
- 026-07 UNIVERSITY OF MINNESOTA, SCHOOL OF MEDICINE, DULUTH
- 026-08 MAYO MEDICAL SCHOOL, ROCHESTER

027 Mississippi

- 027-01 UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE, JACKSON
- 207-02 Mississippi Medical College, Meridian

028 Missouri

- 028-01 Missouri Medical College, St. Louis
- 028-02 WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, ST. LOUIS
- 028-03 UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE, COLUMBIA
- 028-05 Homeopathic Medical College of Missouri, St. Louis
- 028-07 St. Louis College of Physicians and Surgeons
- 028-08 Kansas City Medical College
- 028-10 National University of Arts and Sciences Medical Department, St. Louis
- 028-20 University Medical College of Kansas City
- 028-22 Ensworth Medical College, St. Joseph
- 028-26 Kansas City Homeopathic Medical College
- 028-28 BARNES MEDICAL COLLEGE, ST. LOUIS
- 028-33 Eclectic Medical University, Kansas City
- 028-34 ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, ST. LOUIS
- 028-35 Southwest School of Medicine and Hospital, Kansas City
- 028-43 Kansas City College of Medicine and Surgery
- 028-44 Kansas City University of Physicians and Surgeons
- 028-45 Mid-West Medical College, Kansas City, See 028-43
- 028-46 UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE, KANSAS CITY
- 028-78 Kansas City College of Osteopathy & Surgery
- 028-79 Kirksville College of Osteopathy & Surgery

030 Nebraska

- 030-04 Lincoln Medical College, Eclectic, Lincoln
- 030-05 UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, OMAHA
- 030-06 CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, OMAHA
- 030-07 Nebraska College of Medicine, Lincoln

031 Nevada

- 031-01 UNIVERSITY OF NEVADA SCHOOL OF MEDICAL SCIENCES, RENO

032 New Hampshire

- 032-01 DARTMOUTH MEDICAL SCHOOL, HANOVER

033 New Jersey

- 033-05 COLLEGE OF MEDICINE & DENTISTRY OF NEW JERSEY — NEW JERSEY MEDICAL SCHOOL, NEWARK
- 033-06 COLLEGE OF MEDICINE & DENTISTRY OF NEW JERSEY — RUTGERS MEDICAL SCHOOL, PISCATAWAY

034 New Mexico

- 034-01 UNIVERSITY OF NEW MEXICO SCHOOL OF MEDICINE, ALBUQUERQUE

035 New York

- 035-01 COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK
- 035-03 ALBANY MEDICAL COLLEGE OF UNION UNIVERSITY, ALBANY
- 035-06 STATE UNIVERSITY OF NEW YORK AT BUFFALO, SCHOOL OF MEDICINE, BUFFALO
- 035-08 STATE UNIVERSITY OF NEW YORK COLLEGE OF MEDICINE, BROOKLYN
- 035-09 NEW YORK MEDICAL COLLEGE, NEW YORK
- 035-10 Bellevue Hospital Medical College, New York
- 035-11 New York Medical College and Hospital for Women, New York
- 035-13 Eclectic Medical College of The City of New York
- 035-15 STATE UNIVERSITY OF NEW YORK COLLEGE OF MEDICINE, SYRACUSE
- 035-19 NEW YORK UNIVERSITY SCHOOL OF MEDICINE, NEW YORK
- 035-20 CORNELL UNIVERSITY MEDICAL COLLEGE, NEW YORK
- 035-43 Fordham University School of Medicine, New York
- 035-45 UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE AND DENTISTRY, ROCHESTER
- 035-46 ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY, NEW YORK
- 035-47 MOUNT SINAI SCHOOL OF MEDICINE OF THE CITY UNIVERSITY OF NEW YORK

035-48 STATE UNIVERSITY OF NEW YORK AT STONY BROOK SCHOOL OF MEDICINE, STONY BROOK

036 North Carolina

036-01 UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE, CHAPEL HILL

036-03 Leonard Medical School, Raleigh

036-04 North Carolina Medical College, Charlotte

036-05 BOWMAN GRAY SCHOOL OF MEDICINE, WINSTON-SALEM

036-07 DUKE UNIVERSITY SCHOOL OF MEDICINE, DURHAM

036-08 EAST CAROLINA UNIVERSITY SCHOOL OF MEDICINE, GREENVILLE

037 North Dakota

037-01 UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE, GRAND FORKS

038 Ohio

038-01 Medical College of Ohio, Cincinnati

038-02 Eclectic Medical College, Cincinnati

038-03 Starling Medical College, Columbus

038-06 CASE WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, CLEVELAND

038-08 Cincinnati College of Medicine and Surgery

038-09 Miami Medical College, Cincinnati

038-11 University of Wooster Medical Department, Cleveland

038-19 Toledo Medical College

038-21 Laura Memorial Woman's Medical College, Cincinnati

038-25 Ohio Medical University, Columbus

038-26 Cleveland-Pulte Medical College

038-40 OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, COLUMBUS

038-41 UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, CINCINNATI

038-42 Ohio State University College of Homeopathic Medicine, Columbus

038-43 MEDICAL COLLEGE OF OHIO AT TOLEDO, TOLEDO

038-44 NORTHEASTERN OHIO UNIVERSITY COLLEGE OF MEDICINE, KENT

038-45 WRIGHT STATE UNIVERSITY SCHOOL OF MEDICINE, DAYTON

039 Oklahoma

039-01 UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE, OKLAHOMA CITY

039-04 ORAL ROBERTS UNIVERSITY SCHOOL OF MEDICINE, TULSA

039-79 OKLAHOMA COLLEGE OF OSTEOPATHIC MEDICINE AND SURGERY, TULSA

040 Oregon

040-01 Willamette University Medical Department, Salem

040-02 UNIVERSITY OF OREGON MEDICAL SCHOOL, Portland

041 Pennsylvania

041-01 UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, PHILADELPHIA

041-02 JEFFERSON MEDICAL COLLEGE OF THOMAS JEFFERSON UNIVERSITY, PHILADELPHIA

041-07 MEDICAL COLLEGE OF PENNSYLVANIA, PHILADELPHIA

041-09 HAHNEMANN MEDICAL COLLEGE AND HOSPITAL, PHILADELPHIA

041-11 Medico-Chirurgical College of Philadelphia

041-12 UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, PITTSBURGH

041-13 TEMPLE UNIVERSITY SCHOOL OF MEDICINE, PHILADELPHIA

041-14 PENNSYLVANIA STATE UNIVERSITY COLLEGE OF MEDICINE, THE MILTON S. HERSHEY MEDICAL CENTER, HERSHEY

041-77 Philadelphia College of Osteopathic Medicine, Philadelphia

042 Puerto Rico

042-01 UNIVERSITY OF PUERTO RICO SCHOOL OF MEDICINE, SAN JUAN

042-02 CATHOLIC UNIVERSITY OF PUERTO RICO SCHOOL OF MEDICINE, PONCE

043 Rhode Island

043-01 BROWN UNIVERSITY DIVISION OF BIOLOGICAL AND MEDICAL SCIENCES, PROVIDENCE

045 South Carolina

- 045-01 MEDICAL UNIVERSITY OF SOUTH CAROLINA COLLEGE OF MEDICINE, CHARLESTON

046 South Dakota

- 046-01 UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE, VERMILLION

047 Tennessee

- 047-01 University of Nashville Medical Department
 047-05 VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, NASHVILLE
 047-06 UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, MEMPHIS
 047-07 MEHARRY MEDICAL COLLEGE SCHOOL OF MEDICINE, NASHVILLE
 047-08 Memphis Hospital Medical College
 047-09 Chattanooga Medical College
 047-10 Lincoln Memorial University Medical Department, Knoxville
 047-11 University of The South Medical Department, Sewanee
 047-13 Knoxville Medical College
 047-14 University of West Tennessee College of Medicine and Surgery, Memphis
 047-15 College of Physicians and Surgeons, Memphis
 047-20 EAST TENNESSEE STATE UNIVERSITY, JOHNSON CITY

048 Texas

- 048-02 UNIVERSITY OF TEXAS MEDICAL BRANCH, GALVESTON
 048-03 Fort Worth School of Medicine
 048-04 BAYLOR COLLEGE OF MEDICINE, HOUSTON
 048-05 Physiological Medical College of Texas, Dallas
 048-06 Southern Methodist University Medical Department, Dallas
 048-07 Gate City Medical College, Dallas
 048-08 College of Physicians and Surgeons, Dallas
 048-12 UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL SCHOOL, DALLAS
 048-13 UNIVERSITY OF TEXAS MEDICAL SCHOOL, SAN ANTONIO
 048-14 UNIVERSITY OF TEXAS MEDICAL SCHOOL, HOUSTON
 048-15 TEXAS TECH UNIVERSITY SCHOOL OF MEDICINE, LUBBOCK
 048-16 TEXAS A-M UNIVERSITY COLLEGE OF MEDICINE, COLLEGE STATION
 048-78 TEXAS COLLEGE OF OSTEOPATHIC MEDICINE, FORT WORTH

049 Utah

- 049-01 UNIVERSITY OF UTAH COLLEGE OF MEDICINE, SALT LAKE CITY

050 Vermont

- 050-02 UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, BURLINGTON

051 Virginia

- 051-01 UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE, CHARLOTTESVILLE
 051-04 MEDICAL COLLEGE OF VIRGINIA HEALTH SCIENCES DIVISION OF VIRGINIA COMMONWEALTH UNIVERSITY, RICHMOND
 051-06 University College of Medicine, Richmond
 051-07 EASTERN VIRGINIA MEDICAL SCHOOL, NORFOLK

054 Washington

- 054-04 UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE, SEATTLE
 054-15 Washington College of Physicians and Surgeons, Seattle

055 West Virginia

- 055-01 WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE, MORGANTOWN
 055-02 MARSHALL UNIVERSITY MEDICAL SCHOOL, HUNTINGTON

056 Wisconsin

- 056-02 Wisconsin College of Physicians and Surgeons, Milwaukee
 056-03 Milwaukee Medical College
 056-05 UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, MADISON
 056-06 MEDICAL COLLEGE OF WISCONSIN, MILWAUKEE

057 Wyoming

057-01 WYOMING MEDICAL SCHOOL, LARAMIE

FOREIGN MEDICAL SCHOOL CODES**CANADA****060 Alberta**

060-01 University of Alberta Faculty of Medicine, Edmonton

060-02 University of Calgary Faculty of Medicine

061 British Columbia

061-01 University of British Columbia Faculty of Medicine, Vancouver

062 Manitoba

062-01 University of Manitoba Faculty of Medicine, Winnipeg

063 Newfoundland

063-01 Memorial University of Newfoundland Faculty of Medicine, St. John's

064 Nova Scotia

064-01 Dalhousie University Faculty of Medicine, Halifax

065 Ontario

065-01 University of Toronto Faculty of Medicine, Toronto

065-02 University of Toronto Faculty of Medicine, Toronto

065-03 Medical Faculty of Trinity University, Toronto

065-05 Queen's University Faculty of Medicine, Kingston

065-06 University of Western Ontario Faculty of Medicine, London

065-09 University of Ottawa Faculty of Medicine, Ottawa

065-10 McMaster University Faculty of Medicine, Hamilton

067 Quebec

067-01 McGill University Faculty of Medicine, Montreal

067-02 University of Montreal Faculty of Medicine, Montreal

067-03 Laval University Faculty of Medicine, Quebec

067-04 Laval University Medical Faculty, Montreal

067-06 University of Sherbrooke, Faculty of Medicine, Sherbrooke

068 Saskatchewan

068-01 University of Saskatchewan College of Medicine, Saskatoon

OTHER FOREIGN**118 Afghanistan**

118-01 Faculty of Medicine, Kabul University, Kabul

118-02 Nangrahar Medical Faculty, Jalalabad

120 Albania

120-01 Faculty of Medicine, Tirana Shgiperi

121 Algeria

121- Algeria (Also see 125 Effective 1-1-71)

121-01 Faculte mixte de Medecine et de Pharmacie del'Universite d'Alger, Algiers

125 Algeria125-01 Faculte mixte de Medecine et de Pharmacie del'Universite d'Alger, Algiers
(121-01 Prior to 1-1-71)**132 Argentina**

132-01 Facultad de Ciencias Medicas de la Universidad de Buenos Aires, Buenos Aires

132-02 Facultad de Ciencias Medicas de la Universidad Nacional de Cordoba, Cordoba,
Cordoba132-03 Facultad de Ciencias Medicas de la Universidad Nacional de la Plata, La Plata,
Buenos Aires132-04 Facultad de Ciencias Medicas, Farmacia y Ramos Menores de la Universidad
Nacional del Litoral, Rosario, Santa Fe132-05 Facultad de Medicina de la Universidad Nacional de Tucuman, Tucuman,
Tucuman132-06 Facultad de Ciencias Medicas de la Universidad Nacional de Cuyo, Mendoza,
Mendoza

- 132-07 Facultad de Medicina de la Universidad del Salvador, Buenos Aires
- 132-08 Facultad de Medicina de la Universidad del Nordeste, Corrientes, Corrientes
- 132-09 Facultad de Medicina de la Universidad Catolica de Cordoba, Cordoba, Cordoba

143 Australia

- 143-01 Faculty of Medicine University of Adelaide, Adelaide, South Australia
- 143-02 Faculty of Medicine University of Melbourne, Parkville, Victoria
- 143-03 Faculty of Medicine University of Sydney, Sydney, New South Wales
- 143-05 Faculty of Medicine University of Queensland, Brisbane, Queensland
- 143-06 The University of Western Australia School of Medicine, Nedlands, Western Australia
- 143-07 Faculty of Medicine, University of New South Wales, Sydney, New South Wales
- 143-08 Faculty of Medicine Monash University, Clayton, Victoria
- 143-10 University Tasmania Faculty Medicine Clinical School, Hobart, Tasmania

154 Austria

- 154-01 Medizinische Fakultät der Universität Graz, Graz (407-27 from March 13, 1938 to June, 1945)
- 154-02 Medizinische Fakultät der Universität Innsbruck, Innsbruck (407-28 from March 13, 1938 to June, 1945)
- 154-03 See 759-01
- 154-04 See 759-02
- 154-05 See 286-01
- 154-07 Medizinische Fakultät der Universität Wien, Wien (407-26 from March 13, 1938 to June, 1945)

160 Bangladesh

- 160-01 Chittagong Medical College, Chittagong (704-10 Prior to 7-1-72)
- 160-02 Dacca Medical College, Dacca (704-03 Prior to 7-1-72)
- 160-03 Sir Salimullah Medical College, Dacca
- 160-04 Lytton Medical College, Mymensingh (704-12 Prior to 7-1-72)
- 160-05 Rajshahi Medical College, Rajshahi (704-11 Prior to 7-1-72)
- 160-06 Sylhet Medical College, Sylhet (704-13 Prior to 7-1-72)

165 Belgium

- 165-01 Faculte de Medecine et de Pharmacie Universite libre de Bruxelles, Bruxelles
- 165-02 Faculteit der Geneeskunde Rijksuniversiteit te Gent, Gent
- 165-03 Faculte de Medecine Universite de l'Etat a Liege, Liege
- 165-04 Faculte de Medecine de l'Universite catholique de Louvain, Louvain
- 165-06 Vrije Universiteit Brussel, Brussel
- 165-07 Katholieke Univ Te Leuven Faculteit Der Geneeskunde Leuven Belgium

176 Bolivia

- 176-01 Escuela de Medicina de la Universidad Mayor de San Andres, La Paz
- 176-02 Facultad de Ciencias Medicas de la Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca, Sucre
- 176-03 Facultad de Medicina de la Universidad Mayor de San Simon, Cochabamba

187 Brazil

- 187-01 Faculdade de Medicina da Universidade de Bahia, Salvador, Bahia
- 187-02 Faculdade de Medicina de Porto Alegre, Porto Alegre, Rio Grande do Sul
- 187-03 Faculdade de Medicina da Universidade Federal do Rio de Janeiro, Guanabara
- 187-04 Faculdade de Medicina da Universidade de Sao Paulo, Sao Paulo, Sao Paulo
- 187-05 Faculdade de Medicina do Paraiba, Joao Pessoa, Paraiba
- 187-06 Faculdade de Medicina da Universidade de Minas Gerais, Belo Horizonte, Minas Gerais
- 187-07 Faculdade de Medicina da Universidade do Recife Cidade Universitaria-Engenho do Meio, Recife, Pernambuco
- 187-08 Faculdade de Medicina da Universidade de Parana, Curitiba, Parana
- 187-09 Faculdade de Ciencias Medicas, Rio de Janeiro, Guanabara
- 187-10 Faculdade de Medicina da Universidade do Ceara, Fortaleza, Ceara
- 187-11 Faculdade de Medicina de Ribeirao Preto Universidade de Sao Paulo, Ribeirao Preto, Sao Paulo

- 187-12 Escola Paulista de Medicina, Sao Paulo, Sao Paulo
- 187-13 Escola Fluminense de Medicina, Niteroi, Rio de Janeiro
- 187-14 Escola de Medicina do Espirito Santo, Vitoria, Espirito Santo
- 187-15 Faculdade de Ciencias Medicas de Maranhao, Sao Luis, Maranhao
- 187-16 Faculdade de Medicina da Universidade do Rio Grande do Norte, Natal, Rio Grande do Norte
- 187-17 Faculdade de Medicina de Santa Catarina, Florianapolis, Santa Catarina
- 187-18 Escola de Medicina e Cirurgia do Rio de Janeiro, Rio de Janeiro, Guanabara
- 187-19 Faculdade de Medicina de Sorocaba Pontificia Universidade Catolica de Sao Paulo, Sorocaba, Sao Paulo
- 187-20 Faculdade de Medicina Universidade do Para, Belem, Para
- 187-21 Faculdade de Ciencias Medicas de Pernambuco, Recife, Pernambuco
- 187-22 See 187-03
- 187-23 Faculdade de Medicina de Santa Maria, Universidade do Rio Grande do Sul, Santa Maria, Rio Grande do Sul, Brazil
- 187-24 Faculdade de Ciencias Medicas de Minas Gerais, Belo Horizonte, Minas Gerais
- 187-25 Faculdade Catolica de Medicina de Porto Alegre, Porto Alegre, Rio Grande do Sul
- 187-26 Faculdade de Ciencias Medicas do Parana, Curitiba, Parana
- 187-27 Faculdade de Medicina Fundacao da Cidade do Rio Grande do Sul, Rio Grande
- 187-28 Faculdade de Medicina do Triangulo Mineiro, Uberaba, Minas Gerais
- 187-29 Faculdade de Medicina, Universidade de Juiz de Fora, Juiz de Fora, Minas Gerais
- 187-30 Faculdade de Medicina, Universidade de Campinas, Campinas, Sao Paulo
- 187-31 Faculdade de Ciencias Medicas dos Hospitais da Santa Casa de Misericordia de Sao Paulo
- 187-32 Faculdade de Medicina da Universidade Federal de Goias, Goiania, Goias
- 187-33 Faculdade de Ciencias Medicas Fundacao Universidade De Brazilia, Brazilia DF Brazil
- 187-39 Faculdade de Medicina Fundaco Universidade Do Amazonas Manaus Amazonas
- 187-45 Guanabara Escola Medica do Rio Janeiro Societada Universitaria Gama Filho, Rio de Janeiro
- 187-46 Escola de Medicina e Saude Publicq Universidade Catolica Salvador, Salvador, Bahia
- 187-49 Faculdade De Ciencias Medicas E Biologicas De Bototucatu, Botacatu, Sao Paulo
- 187-55 Faculdade de Medicina de Jundiai, Jundiai, San Paulo
- 187-58 Faculdade de Medicina Univsidade Federal de Alagoas, Maceio, Alagoas
- 187-64 Faculdade de Medicina E Cirurgia de Pernambuco, Recife, Pernambuco
- 187-65 Faculdade de Medicina Academia Militar de Medicina, Rio de Janeiro, Guanabara
- 187-69 Faculdade Medicina de Sao Jose do Rio Preto, Sao Jose do Rio Preto, Sao Paulo

198 Bulgaria

- 198-01 Faculty of Medicine of the Cervenko Higher Institute of Medicine, Sofia
- 198-02 Pavlov Higher Institute of Medicine, Plovdiv

209 Burma

- 209-01 Faculty of Medicine University of Rangoon, Rangoon
- 209-02 Faculty of Medicine University of Mandalay, Mandalay
- 209-03 Medica College II Rangoon, Rangoon

215 Cambodia

- 215-01 Ecole Royal de Medicine Du Cambode, Phnompenh

220 Ceylon

- 220-00 Sri Lanka formerly Ceylon
- 220-01 Faculty of Medicine University of Ceylon, Colombo
- 220-02 Faculty of Medicine University of Ceylon, Peradeniya

231 Chile

- 231-01 Facultad de Medicina de la Universidad de Chile, Santiago
- 231-02 Facultad de Medicina de la Universidad de Concepcion, Concepcion

231-03 Facultad de Medicina de la Universidad Catolica de Chile, Santiago

231-05 Facultad de Medicina de la Universidad de Chile Valparaiso

242 China

- 242 China (also see 243 Effective January 1, 1977)
- 242-03 Peiping Union Medical College, Peiping, Hopei (Extinct)
- 242-06 South China Medical College, Canton (Extinct)
- 242-07 National Hsiangya Medical College, Changsha, Hunan (Extinct)
- 242-09 St. John's University (Pennsylvania Medical School) Shanghai, Kiangsu (Extinct)
- 242-10 Cheeloo University School of Medicine, Tsinan, Shantung (Extinct)
- 242-13 Hackett Medical College for Women, Canton, Kwangtung (Extinct)
- 242-15 Women's Christian Medical College, Shanghai, Kiangsu (Extinct)
- 242-16 National Shanghai Medical College, Shanghai, Kiangsu
- 242-17 West China Union University College of Medicine and Dentistry, Chengtu, Szechuan
- 242-18 Army Medical College, Peking, Hopei (Extinct)
- 242-21 San Yat-sen Medical College of Lingnan University, Canton, Kwangtung
- 242-22 Aurora University Faculty of Medicine, Shanghai, Kiangsu (Extinct)
- 242-24 Tung Teh Medical College, Shanghai, Kiangsu (Extinct)
- 242-25 Army Medical College, Nanking, Kiangsu (Extinct)
- 242-26 National Central University College of Medicine, Nanking, Kiangsu (Extinct)
- 242-27 Tung Nan Medical College, Shanghai, Kiangsu (Extinct)
- 242-28 National Tung Chi University Faculty of Medicine, Shanghai, Kiangsu (Extinct)
- 242-29 National Kiangsu Medical College, Chingkiang, Kiangsu
- 242-30 National Kweiyang Medical College, Kweiyang, Kweichow
- 242-31 Lanchow University Medical College, Lanchow, Kansu (Extinct)
- 242-32 National Shantung University Medical College, Tsingtao, Shantung
- 242-33 Fukien Provincial Medical College, Foochow, Fukien
- 242-34 National Chung Cheng Medical College, Nanchang, Kiangsi (Extinct)
- 242-35 Hopei Provincial Medical College, Paoting, Hopei
- 242-37 Kuang Hua Medical School, Canton, Kwangtung
- 242-38 National Honan University Medical College, Kaifeng, Honan
- 242-39 Shansi University Medical College, Taiyuan, Shansi
- 242-40 National Northwest Medical College, Lanchow, Kansu
- 242-43 Chekiang Provincial Medical College, Hangchow, Chekiang
- 242-44 Harbin Medical University, Harbin, Sungkiang
- 242-45 Second Shanghai Medical College, Shanghai, Shanghai
- 242-46 Shantung Provincial Medical College, Tsinan, Shantung
- 242-47 National Peking University Medical College, Peking, Hopei
- 242-48 Tientsin Medical College, Tientsin, Hopei
- 242-49 Nanking University Medical College, Nanking, Kiangsu (Extinct)
- 242-50 National Chung Shan University (Sun Yat-sen) Medical College, Canton, Kwangtung
- 242-51 National Defense Medical Center School of Medicine, Shanghai, Kiangsu
- 242-52 Wuhan Medical College, Hankow, Hupeh
- 242-53 National Chang-Chun University, Chang Chun, Manchuria (Extinct)
- 242-54 North Kiangsu Medical College, Kiangsu, Nantung
- 242-55 Dairen Medical College, Liaotung, Dairen
- 242-56 Tungohi Medical College, Hupeh, Tsungnan, Wuchang
- 242-57 Anwhei Medical College, Anwhei, Hapei

243 China

- 243-16 National Shanghai Medical College, Shanghai, Kiangsu (242-16 Prior to 1-1-71)
- 243-17 West China University College Medical Dentistry Changtu (242-17 Prior to 1-1-71)
- 243-21 Sun Yat-Sen Medical College Lingnan University, Canton, Kwangtung (242-21 Prior to 1-1-71)
- 243-29 National Kiangsu Medical College, Chingkiang, Kiangsu (242-29 Prior to 1-1-71)
- 243-30 National Kweiyang Medical College, Kweiyang, Kweichow (242-30 Prior to 1-1-71)

- 243-32 National Shangtung University Medical College, Tsingtao, Shangtung (242-32 Prior to 1-1-71)
- 243-33 Fukien Provincial Medical College, Foochow, Fukien (242-33 Prior to 1-1-71)
- 242-35 Hopei Provincial Medical College, Paoting, Hopei
- 243-37 Kuang Hua Medical School, Canton, Kwangtung (242-37 Prior to 1-1-71)
- 243-38 National Honan University Medical College, Kaifeng, Honan (242-38 Prior to 1-1-71)
- 243-39 Shansi University Medical College, Taiyuan, Shansi (242-39 Prior to 1-1-71)
- 243-40 National Northwest Medical College, Lanchow, Chekiang (242-40 Prior to 1-1-71)
- 243-43 Chekiang Provincial Medical College, Hangchow, Chekiang (242-43 Prior to 1-1-71)
- 243-44 Harbin Medical University, Harbin, Sungkiang (242-44 Prior to 1-1-71)
- 243-45 Second Shanghai Medical College, Shanghai, Shanghai (242-45 Prior to 1-1-71)
- 243-46 Shantung Provincial Medical College, Tsinan, Shantung (242-46 Prior to 1-1-71)
- 243-47 National Peking University Medical College, Peking, Hopei (242-47 Prior to 1-1-71)
- 243-48 Tientsin Medical College, Tientsin, Hopei (242-48 Prior to 1-1-71)
- 243-50 National Chung Shan University Medical College, Canton, Kwangtung (242-50 Prior to 1-1-71)
- 243-51 National Defense Medical Center, School of Medicine, Shanghai, Kiangsu (242-51 Prior to 1-1-71)
- 243-52 Wuhan Medical College, Hankow, Hupeh (242-52 Prior to 1-1-71)
- 243-54 North Kiangsu Medical College, Kiangsu, Nantung (242-54 Prior to 1-1-71)
- 243-55 Dairen Medical College, Liaotung, Dairen (242-55 Prior to 1-1-71)
- 243-56 Tungchi Medical College, Hupeh, Tsungnan, Wuchang (242-56 Prior to 1-1-71)
- 243-57 Anwhei Medical College, Anwhei, Hopei (242-57 Prior to 1-1-71)
- 243-61 Kwangsi Provincial Medical College, Kweilin, Kwangsi
- 243-62 Kiangsi Medical College Kiangsi, Namchang

244 Taiwan

- 244 Taiwan (Formosa) effective 1-1-71
- 244-01 Kaohsiung (Takau) Medical College, Kaohsiung (385-01 Prior to 1-1-71)
- 244-02 College of Medicine National Taiwan University, Taipei (385-02 Prior to 1-1-71)
- 244-03 National Defense Medical Center, Taipei (385-03 Prior to 1-1-71)
- 244-04 Taipei Medical College, Taipei (385-04 Prior to 1-1-71)
- 244-05 China Medical College, Taichung (385-05 Prior to 1-1-71)
- 244-06 Chung-Shan Medical College, Taichung

264 Colombia

- 264-01 Facultad de Medicina de la Universidad Nacional de Colombia Ciudad Universitaria, Bogota, Cundinamarca
- 264-02 Facultad de Medicina de la Universidad de Cartagena, Cartagena, Bolivar
- 264-03 Facultad de Medicina de la Universidad de Antioquia, Medellin, Antioquia
- 264-04 Facultad de Medicina de la Pontificia Universidad Javeriana, Bogota, Cundinamarca
- 264-05 Facultad de Medicina de la Universidad del Valle, Cali, Valle
- 264-06 Facultad de Medicina de la Universidad de Caldas, Manizales, Caldas
- 264-07 Facultad de Medicina de la Universidad del Cauca, Popayan, Cauca
- 264-10 Facultad de Medicina Colegio Mayor de Nuestro Senora del Rosario, Bogota
- 264-09 Universidad Indust de Santander Div de Ciencias de la Salud Bucanaranga
- 264-10 Facultad de Medicina Colegio Mayor de Nuestro Senora del Rosario, Bogota
- 264-11 Escuela de Medicina Juan N Corpas, Bogota

266 Zaire

- 266 Formerly Congo
- 266-01 Faculte de Medecine de L'Universite Lovanium, Kimuenza, Leopoldville

270 Costa Rica

- 270-01 Facultad de Medicina Universidad de Costa Rica, San Jose, Costa Rica

275 Cuba

- 275-01 Facultad de Medicina de la Universidad de la Habana, La Habana
- 275-02 Escuela de Medicina Universidad de Oriente, Santiago

286 Czechoslovakia

- 286-01 Deutsche Universitat Medizinische Fakultat, Praha (154-05 Prior to 1919)
- 286-02 Fakulta Vseobeckeno Lekarstvi Karlova Universita, Katerinska, Praha
- 286-03 Lekarska Fakulta Universita Komenskeho, Bratislava
- 286-04 Lekarska Fakulta Universita J. E. Purkyne, Brno
- 286-05 Lekarska Fakulta Palackeho Universita, Lidicka, Olomouc
- 286-06 Lekarska Fakulta Safarikova Universita, Kosice
- 286-07 Universita Karlova Lekarska Fakulta, Hradci Kralove, Hradec, Kralove
- 286-09 Lekarska Fakulta Karlova Universita Plzen

297 Denmark

- 297-01 Det Laegevidenskabelige Fakultet Kobenhavns Universitet, Kobenhavn
- 297-02 Det Laegevidenskabelige Fakultet Aarhus Universitet, Aarhus
- 297-03 Det Laegevidenskabelige Fakultet Odense Universitet Odense

308 Dominican Republic

- 308-01 Facultad de Medicina de la Universidad de Santo Domingo, Ciudad, Trujillo
- 308-02 Escuela de Medicina Universidad, Nacional Pedro Henriquez, Urena, Santo Domingo

315 East Africa (Uganda)

- 315 (Also see 905 UGANDA (Effective 1-1-71))
- 315-01 Faculty of Medicine Makerere College, University College of East Africa, Kampala, Uganda

319 Ecuador

- 319-01 Facultad de Ciencias Medicas de la Universidad Central, Quito
- 319-02 Facultad de Ciencias Medicas de la Universidad de Cuenca, Cuenca
- 319-03 Facultad de Ciencias Medicas de la Universidad de Guayaquil, Guayaquil

330 Egypt (United Arab Republic)

- 330 (Also see 915 United Arab Republic [Effective 1-1-71])
- 330-01 Ibrahim Pasha University Faculty of Medicine, Cairo
- 330-02 Kasr-el-Aini-Faculty of Medicine Cairo University, Cairo (Formerly Fouad First University Faculty of Medicine)
- 330-03 Faculty of Medicine Alexandria University, Alexandria
- 330-04 Abbasis Faculty of Medicine University of Ein Shams, Cairo

341 El Salvador

- 341-04 Facultad de Medicina Universidad Nacional del Salvador, San Salvador

352 England

- 352 (Also see 917 United Kingdom—England—Wales [Effective 1-1-71])
- 352-01 The Medical School University of Birmingham, Birmingham
- 352-02 Faculty of Medicine University of Bristol, Bristol
- 352-03 Cambridge University Medical School, Cambridge
- 352-04 University of Newcastle-upon-Tyne, The Medical School (King's College in the University of Durham) (Prior to August 1, 1963)
- 352-05 School of Medicine University of Leeds, Leeds
- 352-06 Faculty of Medicine University of Liverpool, Liverpool
- 352-07 University of London Faculty of Medicine, London, includes the following Medical Schools:
 - a. University College Hospital
 - b. King's College Hospital Medical School
 - c. The Medical College of St. Bartholomew's Hospital
 - d. St. Thomas's Hospital Medical School
 - e. Westminster Medical School
 - f. Guy's Hospital Medical School
 - g. St. George's Hospital Medical School
 - h. The London Hospital Medical College
 - i. The Middlesex Hospital Medical School

- j. Charing Cross Hospital Medical School
- k. Royal Free Hospital School of Medicine
- l. St. Mary's Hospital Medical School
- 352-08 Faculty of Medicine Victoria University of Manchester, Manchester
- 352-09 Oxford University Medical School, Oxford
- 352-10 Faculty of Medicine University of Sheffield, Sheffield
- 352-11 Registrable Qualifications granted by English Conjoint Board (Royal College of Surgeons of England/Royal College of Physicians of London)
- 352-17 Registrable Qualification granted by Society of Apothecaries of London

363 Estonia

- 363-01 Tartu Ulikooli-Faculte de Medecine de l'Universite de Tartu, Tartu (Extinct)

366 Ethiopia

- 366-01 Haile Selassie I University, Addis Ababa

368 Fiji

- 368-01 Central Medical School, Suva

374 Finland

- 374-01 Laaketieteellinen Tiedekunta Helsingin Yliopisto, Helsinki
- 374-02 Laaketieteellinen Tiedekunta Turun Yliopisto, Turku
- 374-03 Faculty of Medicine University of Oulu, Oulu

385 Formosa (Taiwan)

- 385 (Also see 244 Taiwan [Effective 1-1-71])
- 385-01 Kaohsiung (takau) Medical College, Kaohsiung
- 385-02 College of Medicine National Taiwan University, Taipei
- 385-03 National Defense Medical Center, Taipei
- 385-04 Taipei Medical College, Taipei
- 385-05 China Medical College, Taichung

396 France

- 396-01 Faculte mixte de Medecine et de Pharmacie de l'Universite de Bordeaux, Bordeaux, Gironde
- 396-02 Faculte mixte de Medecine et de Pharmacie de l'Universite de Lille, Lille, Nord
- 396-03 Faculte mixte de Medecine et de Pharmacie Universite de Lyon, Lyon, Rhone
- 396-04 Faculte de Medecine de Montpellier Rue de l'Ecole-de-Medecine, Montpellier, Herault
- 396-05 Faculte de Medecine de l'Universite de Nancy, Nancy, Meurthe-et-Moselle
- 396-06 Faculte de Medecine de l'Universite de Paris, Paris, Seine
- 396-07 Faculte mixte de Medecine et de Pharmacie de l'Universite de Toulouse, Toulouse, Haute-Garonne
- 396-08 Faculte de Medecine de l'Universite de Strasbourg, Strasbourg, Bas-Rhin (407-18 Prior to 1918)
- 396-10 Ecole nationale de Medecine et de Pharmacie Universite de Caen, Rouen, Seine-Maritime
- 396-11 Faculte mixte de Medecine et de Pharmacie de Marseille Universite d'Aix-Marseille, Marseille, Bouches-du-Rhone
- 396-15 Faculte mixte de Medecine et de Pharmacie, Nantes, Loire-Atlantique
- 396-16 Ecole national de Medecine et de Pharmacie Universite de Besancon, Besancon, Doubs
- 396-17 Faculte mixte de Medecine et de Pharmacie Universite de Clermont-Ferrand, Clermont-Ferrand, Puy-de-Dome
- 396-18 Ecole nationale de Medecine et de Pharmacie Universite de Grenoble, Grenoble, Isere
- 396-19 Ecole nationale de Medecine et de Pharmacie de Pharmacie de Tours, Tours, Indre-et Loire
- 396-20 Universite d'Amiens, Amiens
- 396-21 Ecole National de Medecine et de Pharmacie de Angers Maine et Loire
- 396-23 Ecole Nationale de Medecine et de Pharmacie de Dijon Di Jijon Cote d'Or
- 396-24 Universite Catholique de Lille Faculte Libre de Medicine Lille

- 396-26 Ecole National de Medecine et de Pharmacie Poitiers Vienne
- 396-27 Ecole nationale de Medecine et de Pharmacie Reims, Marne
- 396-28 Faculte Mixte de Medecine et de Pharmacie Rennes Ile et Vilaine
- 396-30 Universite de Nice Recherche de Medecine Nice
- 396-31 Universite de Paris V Paris 6E
- 396-32 Universite de Paris VII Paris 5E
- 396-33 Universite de Saint-Etienne Saint-Etienne
- 396-35 Universite de Paris XI Recherche de Medecine Centre Universite de Sceaux
Sceaux

407 Germany

- 407 Also see 408-409—East and West Germany (Effective 1-1-71)
- 407-01 Friedrich-Wilhelms-Universitat Medizinische Fakultat, Berlin, Prussia
- 407-02 Medizinische Fakultat der Rheinischen Friedrich-Wilhelms-Universitat, Bonn,
Nordrhein-Westfalen
- 407-03 Schlesische-Friedrich-Wilhelms-Universitat Medizinische Fakultat, Breslau,
Prussia
- 407-04 Medizinische Fakultat der Universitat Erlangen, Erlangen, Bayern
- 407-05 Medizinische Fakultat der Albert-Ludwigs-Universitat, Freiburg-Im-Breisgau,
Baden-Wurttemberg
- 407-06 Medizinische Fakultat der Justus-Liebig-Universitat, Giessen, Hessen
- 407-07 Medizinische Fakultat der Georg-August-Universitat, Gottingen, Nieder-
sachsen
- 407-08 Medizinische Fakultat der Universitat Greifswald, Greifswald
- 407-09 Medizinische Fakultat der Martin-Luther Universitat, Halle
- 407-10 Medizinische Fakultat der Universitat Heidelberg, Heidelberg, Baden-
Wurttemberg
- 407-11 Medizinische Fakultat der Friedrich-Schiller-Universitat, Jena
- 407-12 Medizinische Fakultat der Christian-Albrechts-Universitat, Kiel, Schleswig-
Holstein
- 407-13 Albertus-Universitat Medizinische Fakultat, Konigsberg, Prussia
- 407-14 Universitat Leipzig Medizinische Fakultat, Saxony
- 407-15 Medizinische Fakultat der Philipps-Universitat, Marburg/Lahn, Hessen
- 407-16 Medizinische Fakultat der Ludwig Maximilians-Universitat, Munchen, Bayern
- 407-17 Medizinische Fakultat der Universitat Rostock, Rostock
- 407-18 Kaiser-Wilhelms-Universitat Medizinische Fakultat, Strassburg (Under French
control since 1918. See 396-08)
- 407-19 Medizinische Fakultat der Eberhard-Karls-Universitat, Tubingen, Baden-
Wurttemberg
- 407-20 Medizinische Fakultat der Julius-Maximilians-Universitat, Wurzburg, Bayern
- 407-21 Medizinische Fakultat der Universitat Hamburg, Hamburg, Hamburg
- 407-22 Medizinische Fakultat der Universitat Koln, Koln, Nordrhein-Westfalen
- 407-23 Medizinische Fakultat der Johann-Wolfgang-Goethe-Universitat, Frankfurt-
Am-Main, Hessen
- 407-24 Medizinische Fakultat der Westfalischen Landes-Universitat, Munster,
Nordrhein-Westfalen
- 407-25 Medizinische Akademie in Dusseldorf, Dusseldorf, Nordrhein-Westfalen
- 407-26 Medizinische Fakultat der Universitat Wien, Wien (154-07 Prior to March 13,
1938 and since June 1945)
- 407-27 Karl-Franzens-Universitat Medizinische Fakultat, Graz, Graz (154-01 Prior to
March 13, 1938 and since June 1945)
- 407-28 Leopold-Franzens-Universitat Medizinische Fakultat, Innsbruck, Innsbruck
(154-02 Prior to March 13, 1938 and since June 1945)
- 407-29 United Hungarian University Medical School, Halle
- 407-30 Medizinische Fakultat der Humboldt-Universitat, Berlin
- 407-32 Medizinische Fakultat der Johannes-Gutenberg-Universitat, Mainz,
Rheinland-Platz
- 407-33 Medizinische Fakultat der Freien Universitat Berlin, Berlin
- 407-34 Medizinische Fakultat der Universitat des Saarlandes, Homburg, Saarland
- 407-35 Klinikum Essen Der Ruhr Universitat Bochun, Essen
- 407-36 Medizinische Akademie Luebeck II Fakultat Medizinische Christian-Albrechts
Universitat Kiel, Luebeck

408 Germany East

- 408-08 Medizinische Fakultät der Universität, Greifswald, Greifswald (407-08 Prior to 1-1-71)
- 408-09 Medizinische Fakultät Martin Luther Universität, Halle (407-09 Prior to 1-1-71)
- 408-11 Medizinische Fakultät Friedrich-Schiller Universität, Jena (407-11 Prior to 1-1-71)
- 408-14 Medizinische Fakultät Karl-Marx Universität, Leipzig (formerly 407-14 Universität Leipzig Prior to 1-1-71)
- 408-17 Medizinische Fakultät Universität, Rostock, Rostock (407-17 Prior to 1-1-71)
- 408-30 Medizinische Fakultät Humboldt Universität, Berlin (407-30 Prior to 1-1-71)

409 Germany West

- 409-02 Medizinische Fakultät der Rheinischen Friedrich-Wilhelms-Universität, Bonn, Nordrhein-Westfalen (407-02 Prior to 1-1-71)
- 409-04 Medizinische Fakultät Universität Erlangen, Erlangen, Bayern (401-04 Prior to 1-1-71)
- 409-05 Medizinische Fakultät Albert-Ludwigs-Universität Freiburg im Breisgau (407-05 Prior to 1-1-71)
- 409-06 Medizinische Fakultät Justus-Liebig Universität Gießen, Hessen (407-06 Prior to 1-1-71)
- 409-07 Medizinische Fakultät Georg-August-Universität Göttingen, Niedersachsen (407-07 Prior to 1-1-71)
- 409-10 Medizinische Fakultät Universität Heidelberg, Baden-Württemberg (407-10 Prior to 1-1-71)
- 409-12 Medizinische Fakultät Christian-Albrechts Universität Kiel (407-12 Prior to 1-1-71)
- 409-15 Medizinische Fakultät Philipps Universität, Marburg Lahn Hessen (407-15 Prior to 1-1-71)
- 409-16 Medizinische Fakultät Ludwig-Maximilians-Universität München, Bayern (407-16 Prior to 1-1-71)
- 409-19 Medizinische Fakultät Eberhard Karls Universität, Tübingen (407-19 Prior to 1-1-71)
- 409-20 Medizinische Fakultät Julius-Maximilians-Universität Würzburg, Bayern (407-20 Prior to 1-1-71)
- 409-21 Medizinische Fakultät Universität Hamburg, Hamburg, Hamburg (407-21 Prior to 1-1-71)
- 409-22 Medizinische Fakultät Universität Köln, Nordrhein-Westfalen (407-22 Prior to 1-1-71)
- 409-23 Medizinische Fakultät Johann-Wolfgang-Goethe Universität Frankfurt-am-Main Hessen (407-23 Prior to 1-1-71)
- 409-24 Medizinische Fakultät Westfälische Landes Universität, Münster, Nordrhein-Westfalen (407-24 Prior to 1-1-71)
- 409-25 Medizinische Akademie Düsseldorf, Düsseldorf, Nordrhein-Westfalen (407-25 Prior to 1-1-71)
- 409-32 Medizinische Fakultät Johannes Gutenberg Universität, Mainz, Rheinland-Pfalz (407-32 Prior to 1-1-71)
- 409-33 Medizinische Fakultät Freie Universität, Berlin, Berlin (407-33 Prior to 1-1-71)
- 409-34 Medizinische Fakultät Universität, Saarland, Homburg, Saarland (407-34 Prior to 1-1-71)
- 409-35 Klinikum Essen der Ruhr Universität Bochum, Essen (407-35 Prior to 1-1-71)
- 409-36 Medizinische Akademie Lüneburg II Fakultät Medizinische Christian-Albrechts Universität Kiel, Lüneburg (407-36 Prior to 1-1-71)
- 409-39 Medizinische Fakultät der Rheinisch-Westfälischen Technischen Hochschule Aachen Nordrhein-Westfalen
- 409-40 Medizinische Fakultät der Technischen Hochschule München München

412 Ghana

- 412-01 Medical School University of Ghana Accra

Goa (See India)

418 Greece

- 418-01 Faculty of Medicine National University of Athens, Athens
- 418-02 Faculty of Medicine University of Thessaloniki, Thessaloniki

429 Guatemala

- 429-01 Facultad de Ciencias Medicas de la Universidad de San Carlos de Guatemala, Guatemala

440 Haiti

- 440-01 Faculte de Medecine et de Pharmacie de l'Universite d'Haiti, Port-Au-Prince

451 Honduras

- 451-01 Facultad de Medicina y Cirugia de la Universidad Nacional Autonoma de Honduras, Tegucigalpa

462 Hong Kong

- 462-01 Faculty of Medicine University of Hong Kong, Hong Kong

473 Hungary

- 473-01 Orvosi Fakultas Tudomanyegyetem, Budapest
- 473-02 Orvosi Fakultas Szegedi Orvostudomanyi Egyetem, Szeged
- 473-03 Orvosi Fakultas Pecs Tudomanyegyetem, Pecs
- 473-04 Orvosi Fakultas Tudomanyegyetem, Debrecen
- 473-05 Magyar Kiralyi Tudomanyegyetem Orvostudomany Fakultas, Koloszar (Extinct)

484 Iceland

- 484-01 Laeknadeild Haskola Islands, Reykjavik

495 India (Goa)

- 495-01 University of Bombay, Affiliated Medical Colleges are:
 - a. Grant Medical College Bombay University, Bombay, Maharashtra
 - b. Seth Gorhandas Sunderdas Medical College Bombay University, Bombay, Maharashtra
- 495-02 Medical College Calcutta University, Calcutta, West Bengal
- 495-03 Medical College Punjab University, Amritsar, Affiliate Medical College is:
 - a. Lady Hardinge Medical College for Women and Hospital for Women and Children, New Delhi, Delhi
- 495-04 Madras Medical College Madras University, Madras, Madras
- 495-05 King George's Medical College Lucknow University, Lucknow, Uttar Pradesh
- 495-08 Christian Medical College Punjab University, Ludhiana, Punjab
- 495-09 St. John's Medical College, Bangalore, Mysore (before June 1966: Government Medical College, Mysore University, Mysore)
- 495-11 Andhra Medical College Andhra University, Visakhapatnam, Andhra
- 495-12 Sarojini Naidu Medical College Agra University, Agra, Uttar Pradesh
- 495-13 Sriram Chandra Bhanj Medical College Utkal University, Cuttack, Orissa
- 495-14 Ayurvedic Medical College, Benares (Constituent College of Benares Hindu University)
- 495-15 Prince of Wales Medical College Patna University, Patna, Bihar
- 495-16 Stanley Medical College Madras University, Madras, Madras
- 495-17 Topiwala National Medical College, Bombay, Maharashtra
- 495-18 Assam Medical College Gauhati University, Dibrugarh, Assam
- 495-19 Medical College and Hospital Nagpur University, Nagpur, Maharashtra
- 495-20 Mahatma Gandhi Memorial Medical College, Indore, Madhya Pradesh
- 495-21 Osmania Medical College Osmania University, Hyderabad, Andhra
- 495-22 B. J. Medical College Gujarat University, Ahmedabad, Gujarat
- 495-23 Medical College Baroda University, Baroda, Gujarat
- 495-24 Darbhanga Medical College Bihar University, Laheriasarai, Bihar
- 495-25 Escola Medico-Cirurgica de Goa, Goa
- 495-27 Christian Medical College, Vellore, Madras
- 495-28 Byramjee Jeejeebhoy Medical College, Poona, Maharashtra
- 495-29 Government Medical College Punjab University, Patiala, Punjab
- 495-30 Sawai Man Singh Medical College Rajasthan University, Jaipur, Rajasthan
- 495-31 Medical College Kerala University, Trivandrum, Kerala

- 495-32 Nilratan Sircar Medical College Calcutta University, Calcutta, West Bengal
- 495-33 Government Medical College, Mysore University (Before June 1966 Bangalore Medical College, Mysore University, Bangalore)
- 495-34 Gajra Rajo Medical College Vikram University, Gwalior Madhya Pradesh
- 495-35 Karnatak Medical College Karnatak University, Hubli, Mysore
- 495-36 All-India Institute of Medical Sciences, New Delhi, Delhi
- 495-37 Kasturba Medical College Karnatak University, Manipal, Mysore
- 495-38 R. G. Kar Medical College Calcutta University, Calcutta, West Bengal
- 495-39 Calcutta National Medical Institute Calcutta University, Calcutta, West Bengal
- 495-40 O.H.N. Medical College Gujarat University, Navrangpura, Bombay
- 495-41 G.S.V. Memorial Medical College Lucknow University, Kampur, Uttar Pradesh
- 495-42 Madurai Medical College, Madurai, Madras
- 495-43 Arya Medical School Punjab State Medical Faculty, Ludhiana, Punjab
- 495-44 Medical College Kerala University, Calicut, Kerala
- 495-45 Maulana Azad Medical College, New Delhi, Delhi
- 495-46 Bankura Sammilani Medical College Calcutta University, Bankura, West Bengal
- 495-47 Medical College Jabalpur University, Jabalpur, Madhya Pradesh
- 495-48 M.P. Shah Medical College Gujarat University, Jamnagar, Gujarat
- 495-49 Gandhi Medical College Vikram University, Bhopai, Madhya Pradesh
- 495-50 Guntur Medical College Andhra University, Guntur, Andhra
- 495-51 Medical College, Srinagar, Jammu and Kashmir
- 495-52 Bangalore Medical College, Bangalore, Mysore
- 495-53 Medical College, Pondicherry
- 495-54 Rajendra Medical College, Ranchi, Bihar
- 495-55 Sardar Patel Medical College, Bikaner, India
- 495-56 Medical College and Civil Hospital Marathwada University, Aurangabad, Maharashtra
- 495-57 Kakatiya Medical College, Warangal, Andhra Pradesh
- 495-58 Shree Rangaraya Memorial Medical College, Andhra University, Kakinada, Andhra
- 495-59 Kilpauk Medical College, Madras, Madras
- 495-60 Jawaharlal Institute of Post Graduate Medicine, Pondicherry
- 495-61 Medical College, Chingleput, Madras
- 495-62 Kurnool Medical College Tirupati University, Kurnool, Andhra
- 495-63 Medical College, Kotayam, Kerala
- 495-64 Shree J.S.M.G.A. Medical College, Nadiad, Bombay
- 495-65 Gandhi Medical College, Osmania University, Hyderabad, Andhra
- 495-66 Medical College, Thanjavur, Madras
- 495-67 Motilal Nehru Medical College, Allahabad, Uttar Pradesh
- 495-68 College Medical Sciences Banaras Hindu University Varanasi, Uttar Pradesh
- 495-69 Medical College, Rohtak, Punjab
- 495-70 Sri Venkateswara Medical College Tirupati University, Tirupati, Andhra
- 495-71 Medical College, Osmania University, Warangal, Andhra
- 495-72 Medical College Bellary, Mysore
- 495-73 Armed Forces Medical College Hospital, Poona, Maharashtra
- 495-74 Medical College Udaipur, Rajasthan
- 495-75 Medical College Jamshedpur, Bihar
- 495-76 S M T N H L Mun Med Coll Gujarat Univ Ahmedabad Gujarat
- 495-77 Medical College, Aligarh, Uttar Pradesh
- 495-78 Medical College, Gauhati, Assam
- 495-79 Burla Medical College-Hospital Utkal University, Sambalpur, Orissa
- 495-80 Medical College, Alleppey, Kerala
- 495-81 Medical College, Rajasthan University, Bikaner, Rajasthan
- 495-82 Medical College, Miraj, Maharashtra
- 495-83 Government Medical College Nagpur University Nagpur Maharashtra
- 495-89 Government Medical College Gujarat University Surat Gujarat
- 495-90 Himachal Pradesh Medical College, Simla Himachal, Pradesh
- 495-92 P.J. Nehru Memorial Medical College Ravi Shankar University, Raipur Medhia, Pradesh

- 495-93 Reiva Medical College University of Saugar, Reiva Madhya, Pradesh
- 495-94 Coimbatore Medical College, University of Madras, Coimbatore, Madras
- 495-95 Medical College, Tirunelveli, Madras
- 495-96 Municipal Medical College, Seion University, Bombay (Lokmanya T.M.M. College, Bombay Maharashtra)
- 495-97 Dr. Vaishampayan Memorial Medical College, Shivaji University, Shalapur, Maharashtra
- 495-98 Jawaharal Nehru Medical College, Karnatak University, Belgaum, Mysore
- 495-99 J.J.M. Medical College Mysore University, Devangere, Mysore

496 India

- 496-01 Hyderabad Karnatak Education Society's Medical College, Karnatak University, Galbarga, Mysore
- 496-02 Medical College, Ajmer, Rajasthan
- 496-03 Dr. S.N. Medical College Rajasthan University, Jodphur, Rajasthan
- 496-04 Lala Lajbut Rai Memorial Medical College, Meerut University, Meerut, Uttar Pradesh
- 496-05 Medical College Behrampur, Drissa
- 496-07 Lady Hardinge Medical College and Hospital for Women and Children, New Delhi, Delhi

506 Indonesia

- 506-01 Faculty of Medicine University of Indonesia, Djakarta
- 506-02 Faculty of Medicine Airlangga Airlangga University, Surabaya
- 506-03 Faculty of Medicine Gadjah Mada University, Djokjakarta
- 506-04 Faculty of Medicine University of North Sumatra, Medan
- 506-05 Faculty of Medicine Padjadjaran University, Bandung
- 506-11 Faculty of Medicine, Malang, Malang
- 506-15 Diponegro University Faculty of Medicine, Semarang, Java
- 506-16 Universitas Trisakti Facultas, Kedokteran, Djakarta

517 Iran

- 517-01 Faculty of Medicine University of Teheran, Teheran
- 517-03 Faculty of Medicine, Tabriz
- 517-04 Faculty of Medicine, Meshed
- 517-05 Faculty of Medicine, Shiraz
- 517-06 Faculty of Medicine, Isfahan
- 517-07 Faculty of Medicine, Ohwaz
- 517-08 School of Medicine National University of Iran, Teheran

528 Iraq

- 528-01 Faculty of Medicine Baghdad University, Baghdad
- 528-02 College of Medicine Baghdad University, Mosul

539 Ireland

- 539-01 Faculty of Medicine Queen's University of Belfast, Belfast (Also see 918-01 effective 1-1-71)
- 539-02 National University of Ireland, Constituent Colleges are:
 - a. Faculty of Medicine University College, Dublin
 - b. Faculty of Medicine University College, Cork
 - c. Faculty of Medicine, Galway
- 539-03 School of Physic Trinity College University of Dublin, Dublin
- 539-06 Registrable Qualification granted by the Royal College of Physicians of Ireland and Royal College of Surgeons in Ireland
- 539-11 Registrable Qualification granted by Apothecaries' Hall of Dublin

550 Israel

- 550-01 The Hebrew University-Hadassah Medical School, Jerusalem
- 550-02 University of Tel-Aviv, Tel-Aviv
- 550-03 Aba Koushy School of Medicine Israel Institute Technology, Haifa

561 Italy

- 561-01 Facolta di Medicina e Chirurgia dell'Universita di Bologna, Bologna
- 561-02 Facolta di Medicina e Chirurgia dell'Universita di Cagliari, Cagliari

- 561-03 Facolta di Medicina e Chirurgia dell'Universita di Milano, Milano
- 561-04 Facolta di Medicina e Chirurgia dell'Universita di Catania, Catania
- 561-06 Facolta di Medicina e Chirurgia dell'Universita di Firenze, Firenze
- 561-07 Facolta di Medicina e Chirurgia dell'Universita di Genova, Genova
- 561-08 Facolta di Medicina e Chirurgia dell'Universita di Messina, Messina
- 561-09 Facolta di Medicina e Chirurgia dell'Universita di Modena, Modena
- 561-10 Facolta di Medicina e Chirurgia dell'Universita di Napoli, Napoli
- 561-11 Facolta di Medicina e Chirurgia dell'Universita di Padova, Padova
- 561-12 Facolta di Medicina e Chirurgia dell'Universita di Palermo, Palermo
- 561-13 Facolta di Medicina e Chirurgia dell'Universita di Parma, Parma
- 561-14 Facolta di Medicina e Chirurgia dell'Universita di Pavia, Pavia
- 561-15 Facolta di Medicina e Chirurgia dell'Universita di Perugia, Perugia
- 561-16 Facolta di Medicina e Chirurgia dell'Universita di Pisa, Pisa
- 561-17 Facolta di Medicina e Chirurgia dell'Universita di Roma, Roma
- 561-18 Facolta di Medicina e Chirurgia dell'Universita di Sassari, Sassari
- 561-19 Facolta di Medicina e Chirurgia dell'Universita di Siena, Siena
- 561-20 Facolta di Medicina e Chirurgia dell'Universita di Torino, Torino
- 561-21 Facolta di Medicina e Chirurgia dell'Universita di Bari, Bari
- 561-22 Facolta di Medicina e Chirurgia dell'Universita di Ferrara, Ferrara
- 561-23 Facolta di Medicina-Chirurgia dell'Universita Cattolica de Sacro Cuoro Di
Milano, Roma
- 561-25 Libera University Degli Studi G D'Annunzio, Chieti

563 Ivory Coast

- 563-01 Ecole De Medecine University D'Abidjan, Abidjan

566 Jamaica (see West Indies)

- 566 Jamaica (Also see 950 West Indies)
- 566-01 Faculty Medicine University College, West Indies, Kingston, Jamaica (950-01
Prior to 1-1-71)

572 Japan

- 572-01 Faculty of Medicine Kyoto University, Kyoto, Kyoto
- 572-03 Faculty of Medicine University of Tokyo, Tokyo, Tokyo
- 572-04 School of Medicine Nagoya National University, Nagoya, Aichi
- 572-05 School of Medicine Chiba University, Chiba, Chiba
- 572-06 Faculty of Medicine Kanazawa University, Kanazawa, Ishikawa
- 572-07 School of Medicine Kumamoto University, Kumamoto, Kumamoto
- 572-08 Faculty of Medicine Nagasaki University, Nagasaki, Nagasaki
- 572-09 Okayama University Medical School, Okayama, Okayama
- 572-10 Faculty of Medicine Tohoku University, Sendai, Miyagi
- 572-11 Tokyo Medical College (Nippon Ikadaigaku) Hongo, Tokyo (Extinct)
- 572-12 Faculty of Medicine Kyushu University, Fukuoka, Fukuoka
- 572-13 Kyoto Prefectural University of Medicine, Kyoto, Kyoto
- 572-15 School of Medicine Niigata University, Niigata, Niigata
- 572-16 Faculty of Medicine Osaka University, Osaka, Osaka
- 572-17 Tokyo Charity Association Medical College, Tokyo, Tokyo (Extinct)
- 572-18 Tokyo Women's Medical College, Tokyo, Tokyo
- 572-20 School of Medicine Keio Gijuku University, Tokyo, Tokyo
- 572-24 Okinawa Medical Institute, Naha, Okinawa (Extinct)
- 572-25 Japan University Medical Department (Nippon Daigaku Ikadaigaku) Kanda,
Tokyo
- 572-26 Showa Medical School, Tokyo, Tokyo
- 572-27 Medical College of Toho University, Tokyo, Tokyo
- 572-28 Faculty of Medicine Nihon University, Tokyo, Tokyo
- 572-29 Faculty of Medicine Hokkaido University, Sapporo, Hokkaido
- 572-30 Kobe Medical College, Kobe, Hyogo
- 572-31 Yamaguchi Prefectural University of Medicine, Ube Yamaguchi
- 572-32 School of Medicine Yokohama Municipal University, Yokohama, Kanagawa
- 572-33 School of Medicine Gunma University, Maebashi, Gunma
- 572-34 Faculty of Medicine Mie Prefectural University, Tsu, Mie
- 572-35 School of Medicine Tokyo Medical and Dental University, Tokyo, Tokyo
- 572-36 Hiroshima University Medical School, Hiroshima, Hiroshima

- 572-37 Tokyo Jikei-Kai School of Medicine, Tokyo, Tokyo
- 572-38 Nippon Medical School, Tokyo, Tokyo
- 572-39 Iwate Medical University, Morioka, Iwate
- 572-40 Faculty of Medicine Juntendo University, Tokyo, Tokyo
- 572-41 Faculty of Medicine Shinshu University, Matsumoto, Nagano
- 572-42 Kansai Medical College, Moriguchi, Osaka
- 572-43 Faculty of Medicine Tottori University, Yonago, Tottori
- 572-44 Faculty of Medicine Hirosaki University, Hirosaki, Aomori
- 572-45 Faculty of Medicine Kagoshima University, Kagoshima, Kagoshima
- 572-46 Gifu Prefectural Medical College, Gifu, Gifu
- 572-47 Medical School Nagoya City University, Nagoya, Aichi
- 572-48 Osaka City Medical School, Osaka, Osaka
- 572-49 Tokyo Medical College, Tokyo, Tokyo
- 572-50 Faculty of Medicine Kurume University, Kurume, Fukuoka
- 572-51 Osaka Medical College, Takatsuki, Osaka
- 572-52 School of Medicine Tokushima University, Tokushima, Tokushima
- 572-53 Sapporo Medical College, Sapporo, Hokkaido
- 572-54 Wakayama Prefectural Medical College, Wakayama, Wakayama
- 572-55 Nara Prefectural Medical College, Kashiwabara, Nara
- 572-56 Fukushima Prefectural Medical College, Fukushima, Fukushima
- 572-59 Osaka Medical University for Women, Hirakata, Osaka

577 Kenya

- 577-01 University of Nairobi Faculty of Medicine, Kenyatta National Hospital, Nairobi

582 Korea (North)

- 582-05 Pyong Yang Medical College, Pyong Yang (583-05 Prior to 1-1-71)
- 582-07 Ham Heung Medical School, Ham Heung (583-07 Prior to 1-1-71)

583 Korea (South)

- 583-01 Severance Medical College Yonsei University, Seoul
- 583-02 College of Medicine Seoul National University, Seoul
- 583-03 Korea University Medical College (Formerly Woo Sok University Medical College) (Formerly Soo Do Medical College, Seoul)
- 583-04 College of Medicine Kyong-Puk National University, Taegu
- 583-05 Pyon Yang Medical College, Pyong Yang, North Korea (582-05 as of 1-1-71)
- 583-06 College of Medicine Chun Nam National University, Kwangju
- 583-07 Ham Heung Medical School, Ham Heung, North Korea (582-07 as of 1-1-71)
- 583-08 College of Medicine Ewha Women's University, Seoul
- 583-09 College of Medicine Pusan National University, Pusan
- 583-10 College of Medicine Catholic University, Seoul
- 583-12 College of Medicine Kyonghue University, Seoul
- 583-13 Hanyang University School of Medicine, Sungdong-Ku, Seoul
- 583-15 Choongang University Medical School, Seoul

590 Laos

- 590-01 Ecole Royale de Medecine Du Laos, Vientiane

594 Latvia

- 594-01 Latvijas Universitate Medicinas Fakultate, Riga (Extinct)

605 Lebanon

- 605-01 Medical School American University of Beirut, Beirut
- 605-02 Faculte Francaise de Medecine et de Pharmacie de l'Universite Saint-Joseph, Beyrouth

610 Liberia

- 610-01 A M Doglioth College Medicine University Liberia, Monrovia

616 Lithuania

- 616-01 Vytauta Didziojo Universiteto Medicinos Fakelteto, Kaunas (Extinct)

624 Malaysia

- 624-01 University of Malaya, Kuala, Lumpur

627 Malta

- 627-01 Faculty of Medicine and Surgery Royal University of Malta, Valetta

638 Manchuria

- 638-01 Manchuria Medical College, Mukden (Extinct)
638-02 Mukden Medical College, Mukden (Extinct)

649 Mexico

- 649-01 Facultad de Medicina de la Universidad Nacional Autonoma de Mexico, Mexico
649-02 Facultad de Medicina de la Universidad de Nuevo Leon, Monterrey, Nuevo Leon
649-03 Facultad de Medicina de la Universidad de Guadalajara, Guadalajara, Jalisco
649-04 Facultad de Medicina de la Universidad Autonoma de San Luis Potosi, San Luis Potosi, San Luis Potosi
649-05 Escuela Medico Militar Mexico, D.F.
649-06 Facultad de Medicina de la Universidad Nacional del Sureste, Merida, Yucatan
649-07 Facultad de Medicina de la Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Michoacan
649-08 Escuela Libre de Homeopatia de Mexico, Mexico
649-09 Escuela Libre de Homeopatia del Estado de Puebla, Puebla, Puebla (Extinct)
649-10 Escuela de Medicina y Cirugia de la Universidad "Benito Juarez" de Oaxaca, Oaxaca
649-11 Instituto Libre Homeopatia de Mexico, Mexico (Extinct)
649-14 Facultad de Medicina de la Universidad Autonoma de Guadalajara, Guadalajara, Jalisco
649-15 National Homeopatia Mexico School, Mexico City (Extinct)
649-17 Escuela Nacional de Medicina Homeopatia del Instituto Politecnico Nacional, Mexico
649-18 Facultad de Medicina de la Universidad Autonoma de Puebla, Puebla, Puebla
649-19 Escuela de Medicina de la Universidad de Tamaulipas, Tampico, Tamaulipas
649-20 Escuela de Medicina "Miguel Aleman" de la Universidad Veracruzana, Veracruz, Veracruz
649-21 Escuela de Medicina del Instituto Cientifico y Literario Autonoma del Estado de Hidalgo, Pachuaca, Hidalgo
649-22 Escuela de Medicina de la Universidad Juarez del Estado de Durango, Durango, Durango
649-23 Escuela de Medicina de la Universidad de Coahuila, Torreon, Coahuila
649-24 Escuela de Medicina de la Universidad de Campeche, Campeche, Campeche
649-25 Escuela de Medicina de Leon Universidad de Guanajuato, Leon, Guanajuato
649-26 Escuela Superior de Medicina Rural de Instituto Politecnico Nacional, Mexico, D.F.
649-27 Facultad de Medicina de la Universidad de Chihuahua, Chihuahua, Chihuahua
649-28 Escuela de Medicina de la Universidad Autonoma del Estado de Mexico, Toluca
649-30 U de Monterrey Inst Ciencias de la Salud Fac Med Monterrey, Neuvo, Leon
649-31 Escuela Mexicana de Medicina Universidad Le Salle, Mexico, D.F.
649-33 Universidad Autonoma de Cindad Juarex Ciudad Juarex, Chihuahua

660 Netherlands

- 660-01 Faculteit der Geneeskunde Universiteit Van Amsterdam, Amsterdam
660-02 Medische Faculteit Rijksuniversiteit te Groningen, Groningen
660-03 Medische Faculteit Rijksuniversiteit te Leiden, Leiden
660-04 Faculteit der Geneeskunde Rijksuniversiteit te Utrecht, Utrecht
660-05 Faculteit der Geneeskunde Rooms-Katholieke Universiteit te Nijmegen, Nijmegen
660-06 Faculteit der Geneeskunde Vrije Universiteit te Amsterdam, Amsterdam
660-07 Medische Faculteit Rotterdam, Rotterdam

671 New Zealand

- 671-01 Medical School University of Otago, Dunedin
671-02 University of Auckland School of Medicine, Auckland

682 Nicaragua

- 682-01 Facultad de Medicina y Cirugia de la Universidad Nacional de Nicaragua, Leon

690 Nigeria

- 690-01 Faculty of Medicine University College, Ibadan
- 690-02 Medical School University of Lagos, Lagos

692 North Viet-Nam

- (Also see 938 Viet-Nam North Effective 1-1-71)
- 692-01 Faculte mixte de Medicine et de Pharmacie Universite de Hanoi, Hanoi

693 Norway

- 693-01 Medisinske Fakultet Universitetet i Oslo, Oslo
- 693-02 Medisinske Fakultet Universitetet i Bergen, Bergen

704 Pakistan

(See also 160 Bangladesh)

- 704-01 King Edward Medical College, Lahore, West Pakistan
- 704-02 Dow Medical College, Karachi, Federal Capital Area
- 704-03 Dacca Medical College, Dacca, East Pakistan
- 704-04 Nishtar Medical College, Multan, West Pakistan
- 704-05 Punjab Medical School, Lahore, West Pakistan (Extinct)
- 704-06 Fatima Jinnah Medical College for Women, Lahore, West Pakistan
- 704-07 C.M.S. Medical School, Hyderabad, West Pakistan (Extinct)
- 704-08 Liaquat Medical College, Hyderabad, West Pakistan
- 704-09 Khyber Medical College, Peshawar, North-West Frontier Province
- 704-10 Chittagong Medical College, Chittagong, East Pakistan (160-01 after 7-1-72)
- 704-11 Rajshahi Medical College, Rajshahi, East Pakistan (160-05 after 7-1-72)
- 704-12 Lytton Medical College, Mymensingh, East Pakistan (160-04 after 7-1-72)
- 704-13 Sylhet Medical College, Sylhet, East Pakistan (160-06 after 7-1-72)

715 Panama

- 715-01 Facultad de Medicina de la Universidad de Panama, Panama

720 Papua

- 720-01 Univ Papua and New Guinea Faculty of Medicine, Boroko

726 Paraguay

- 726-01 Facultad de Medicina de la Universidad Nacional de Asuncion, Asuncion

737 Peru

- 737-01 Facultad de Medicina de San Fernando de la Universidad Nacional Mayor de San Marcos, Lima
- 737-03 Facultad de Medicina de la Universidad de la Libertad, Trujillo
- 737-05 Facultad de Medicina de la Universidad Nacional de San Agustin, Arequipa
- 737-06 Facultad de Medicina "Cayetano Heredia" de la Universidad Peruana de Ciencias Medicas y Biologicas, Lima
- 737-08 Facultad de Medicina Universidad Nacional de San Luis Gonzaga de Ica, Ica

748 Philippines

- 748-01 Faculty of Medicine and Surgery University of Santo Tomas, Manila
- 748-02 College of Medicine University of the Philippines, Manila
- 748-05 Afable College of Medicine, Manila (Extinct)
- 748-07 College of Medicine Manila Central University, Manila
- 748-08 Institute of Medicine Far Eastern University, Manila
- 748-09 College of Medicine Southwestern University, Cebu City
- 748-10 College of Medicine University of the East, Quezon City
- 748-11 College of Medicine Cebu Institute of Technology, Cebu City

759 Poland

- 759-01 Akademia Medyczna, Krakow (154-03 Prior to 1919)
- 759-02 Uniwersytet Jana Kazimierza Wydział Lekarski, Lwow (154-04 Prior to 1919)
- 759-03 Akademia Medyczna Wydział Lekarski, Warszawa
- 759-04 Akademia Medyczna Wydział Lekarski, Poznan
- 759-05 Uniwersytet Stefana Batorego Wydział Lekarski, Wilno (Extinct)
- 759-06 Marie Curie Skłodowska University Faculty of Medicine, Lublau
- 759-07 Akademia Medyczna Gdansk

- 759-08 Pomorska Akademia Medyczna im.gen. K.Swierczewskiego, Szczecin
- 759-09 Akademia Medyczna, Lodz
- 759-10 Akademia Medyczna, Wroclaw
- 759-11 Akademia Medyczna, Bialystock
- 759-12 Slaska Akademia Medyczna im. Ludwika Warynskiego, Zabrze

770 Portugal

- 770-01 Faculdade de Medicina de la Universidade de Coimbra, Coimbra
- 770-02 Faculdade de Medicina de la Universidade de Lisboa, Lisboa
- 770-03 Faculdade de Medicina de la Universidade do Porto, Porto

775 Rhodesia

- 775-01 Faculty of Medicine University College of Rhodesia and Myasaland, Salisbury, Southern Rhodesia

781 Romania

- 781-01 Institutul de Medicina si Farmacie, Bucuresti
- 781-02 Institutul de Medicina si Farmacie, Iasi
- 781-03 Institutul de Medicina si Farmacie, Cluj
- 781-04 Institutul de Medicina, Timisoara
- 781-05 Institutul de Medicina si Farmacie, Tirgu-Mures

803 Scotland

(Also see 919 United Kingdom-Scotland effective 1-1-71)

- 803-01 Faculty of Medicine University of Aberdeen, Aberdeen
- 803-02 University of St. Andrews School of Medicine, Dundee
- 803-03 Faculty of Medicine University of Edinburgh, Edinburgh
- 803-04 School of Medicine of the Royal Colleges, Edinburgh (Extinct)
- 803-05 Faculty of Medicine University of Glasgow, Glasgow
- 803-06 Anderson College of Medicine, Glasgow (Extinct)
- 803-09 Registrable Qualification granted by Scottish Conjoint Board
- 803-16 Polish School of Medicine, Edinburgh (Extinct)

820 Senegal

- 820-01 Faculte mixte de Medicine et de Pharmacie, Universite de Dakar, Dakar

825 Singapore

- 825-01 Faculty of Medicine University of Malaya, Singapore

836 South Africa

- 836-01 Medical School University of the Witwatersrand, Johannesburg
- 836-02 Faculty of Medicine University of Cape Town, Cape Town
- 836-03 Faculty of Medicine University of Pretoria, Pretoria
- 836-04 Faculty of Medicine University of Stellenbosch, Bellville
- 836-05 Faculty of Medicine University of Natal, Durban

840 South Viet-Nam

(Also see 941 Viet-Nam South)

- 840-01 Faculte mixte de Medecine et de Pharmacie Universite de Saigon, Saigon

847 Spain

- 847-01 Facultad de Medicina de la Universidad de Barcelona, Barcelona
- 847-02 Universidad de Sevilla
 - a. Facultad de Medicina de Cadiz, Cadiz
 - b. Facultad de Medicina de la Universidad de Sevilla, Sevilla
- 847-03 Facultad de Medicina de la Universidad de Granada, Granada
- 847-04 Facultad de Medicina de la Universidad de Madrid, Madrid
- 847-05 Facultad de Medicina de la Universidad de Santiago de Compostela, Santiago De Compostela
- 847-06 Facultad de Medicina de la Universidad de Zaragoza, Zaragoza
- 847-08 Facultad de Medicina de la Universidad de Valencia, Valencia
- 847-09 Facultad de Medicina de la Universidad de Valladolid, Valladolid
- 847-10 Facultad de Medicina de la Universidad e Salamanca, Salamanca
- 847-11 Facultad de Medicina de la Universidad Catolica de Navarra, Pomplona
- 847-12 Univ Autonomia de Barcelona Fac Med Hosp Santa Cruz San Pablo Barcelona

- 847-13 Univ Autonoma de Madrid Facultad de Medicine, Madrid
- 847-14 Universidad de la Laguna Facultad de Medicine, Laguna
- 847-15 Universidad de Oviedo Facultad e Medicine, Oviedo

848 Sudan

- 848-01 Faculty of Medicine University of Khartoum, Khartoum (849-01 Prior to 1-1-71)

849 Sudan

(Also see 848 SUDAN Effective 1-1-71)

- 849-01 Faculty of Medicine, University of Khartoum, Khartoum

850 Surinam

- 850-01 Geneeskundige School, Paramaribo

858 Sweden

- 858-01 Medicinska Fakulteten Universitetet i Lund, Lund
- 858-02 Kungl. Karolinska Mediko-Kirurgiska Institutet, Stockholm
- 858-03 Medicinska Fakulteten Universitetet i Uppsala, Uppsala
- 858-04 Kungl. Medicinska Hogskolan, Umea
- 858-05 Medicinska Fakulteten Goteborgs Universitetet, Goteborg

869 Switz erland

- 869-01 Medizinische Fakultat der Universitat Basel, Basel
- 869-02 Medizinische Fakultat der Universitat Bern, Bern
- 869-04 Faculte de Medecine de l'Universite de Geneva, Geneve
- 869-05 Faculte de Medecine de l'Universite de Lausanne, Lausanne
- 869-07 Medizinische Fakultat der Universitat Zurich, Zurich

875 Syria

- 875-01 Faculty of Medicine Damascus University, Damascus
- 875-02 Faculty of Medicine University of Aleppo, Aleppo

Taiwan (See Formosa)

880 Tanzania

- 880-01 University of Dak-Es-Salaam Faculty of Medicine, Dak-Es-Salaam

891 Thailand

- 891-01 Faculty of Medicine at Chulalongkorn Hospital University of Medical Sciences, Bangkok
- 891-02 Faculty of Medicine at Siriraj Hospital University of Medical Sciences, Thonburi
- 891-03 Faculty of Medicine at Chiangmai Hospital University of Medical Sciences, Chiangmai
- 891-04 Faculty of Medicine at Ramathigodi Hospital Mahidol University, Bangkok

902 Turkey

- 902-01 Tip Fakultesi Istanbul Universitesi, Istanbul
- 902-03 Tip Fakultesi Ankara Universitesi, Ankara
- 902-04 Tip Fakultesi Ege Universitesi, Izmir
- 902-05 Hacettepe Universitesi Faculty of Medicine, Ankara
- 902-07 Istanbul University Cerrahpasa Tip Fakultesi, Cerrahpasa, Istanbul

905 Uganda

- 905-01 Faculty of Medicine Makerere College University College of East Africa, Kampala (315-01 Prior to 1-1-71)

913 Union of Soviet Socialist Republics

- 913-01 First Leningrad Medical Institute (I.P. Pavlov Institute), Leningrad
- 913-02 Voronez Medical Institute, Voronez
- 913-03 Kazan' Medical Institute, Kazan'
- 913-04 Harkov Medical Institute, Harkov
- 913-05 Kiev Medical Institute, Kiev
- 913-06 First Moscow Order-of-Lenin Medical Institute, Moscow
- 913-07 Odessa Medical Institute, Odessa
- 913-08 Tomsk Medical Institute, Tomsk

- 913-09 Leningrad Institute of Sanitation and Hygiene, Leningrad
- 913-10 Dnepropetrovsk Medical Institute, Dnepropetrovsk
- 913-11 Saratov Medical Institute, Saratov
- 913-12 Rostov Medical Institute, Rostov-on-Don
- 913-13 Crimean Medical Institute, Simferopol
- 913-14 Irkutsk Medical Institute, Irkutsk
- 913-15 Second Moscow Medical Institute, Moscow
- 913-17 Military Medical Academy, Leningrad (Extinct)
- 913-18 Vinnica Medical Institute, Vinnica
- 913-19 Azerbaijan Medical Institute, Baku
- 913-20 Imperatorskii Novorossiiskii Universitet, Odessa (Extinct)
- 913-21 Taskent Medical Institute, Taskent
- 913-22 Kuban Medical Institute, Krasnodar
- 913-23 Tbilisi Medical Institute, Tbilisi
- 913-24 Stalino Institute of Medicine, Stalino (Extinct)
- 913-26 Samarkand Medical Institute, Samarkand
- 913-28 Third Medical Institute, Leningrad
- 913-29 Kazakh Medical Institute, Alma-Ata
- 913-30 Askabad Medical Institute, Askabad
- 913-31 Daghestan Medical Institute, Mahac-Kala
- 913-32 Byelorussia Medical Institute, Minsk
- 913-33 Vitebsk Medical Institute, Vitebsk
- 913-34 Frunze Medical Institute, Frunze
- 913-35 Kursk Medical Institute, Kursk
- 913-36 Gor'Kij Medical Institute Gor'Ku (Gorki)
- 913-37 Kujbysev Medical Institute, Kujbysev
- 913-38 Erevan Medical Institute, Erevan, Armenian SSR
- 913-50 Kisinevskij Medicinskij Institut Kisinev Moldavian SSR
- 913-52 Astrahanskij Medicinskij Institut Astrahan Russian SFSR
- 913-66 Kemerovskij Medical Institut Kemerovo Russian SFSK
- 913-69 Leningrad Institute Paediatrics, Leningrad, Russian SSR
- 913-70 Faculty of Medicine Univ of Ozgorod Uzgorod Ukrainian SSR
- 913-72 Novosibirskij Medicinskij Institut Novosibirsk, Russian SFSR
- 913-78 Smolenskij Medicinskij Institut Smolensk Russian SFRS
- 913-81 Sverdlovsk Medicinskij Institut Sverdlovsk Russian SFSR
- 913-86 Cernovickij Medicinskij Institut Cernovcy Ukrainian SSR
- 913-87 Stanislav Medical Institut Stanislav Ukrainian SSR
- 913-89 Lvov Medical Institute Lvov Ukrainian SSR
- 913-92 Faculty of Medicine P Lumumbra Friendship University, Moscow
- 913-95 Tjumenskij Medicinskij Institut Tjomen Russian SFSR
- 913-97 Doneckij Medicinskij Institut Doneck Ukrainian SSR

915 United Arab Republic

- 915-01 Ibrahim Pasha University Faculty Medicine, Cairo (330-01 Prior to 1-1-71)
- 915-02 Kas-el Aini-Faculty Medicine Cairo University, Cairo (330-02 Prior to 1-1-71)
- 915-03 Faculty Medicine Alexandria University, Alexandria (330-03 Prior to 1-1-71)
- 915-04 Abbasis Faculty Medicine University Ein Shams, Cairo (330-04 Prior to 1-1-71)
- 915-05 Faculty of Medicine Assyut University, Assyut
- 915-08 Faculty of Medicine El Azhar University, Cairo

917 United Kingdom—England—Wales

- 917-01 The Medical School University Birmingham, Birmingham (352-01 Prior to 1-1-71)
- 917-02 Faculty of Medicine University Bristol, Bristol (352-02 Prior to 1-1-71)
- 917-03 Cambridge University Medical School, Cambridge (352-03 Prior to 1-1-71)
- 917-04 University of Newcastle-Upon-Tyne, The Medical School (352-04 Prior to 1-1-71)
- 917-05 School of Medicine University of Leeds, Leeds (352-05 Prior to 1-1-71)
- 917-06 Faculty of Medicine University of Liverpool (352-06 Prior to 1-1-71)
- 917-07 University of London Faculty Medicine, London (352-07 Prior to 1-1-71)
 - a. University College Hospital
 - b. Kings College Hospital Medical School

- c. The Medical College of St. Bartholomew's Hospital
- d. St. Thomas Hospital Medical School
- e. Westminster Medical School
- f. Guys Hospital Medical School
- g. St. Georges Hospital Medical School
- h. The London Hospital Medical College
- i. The Middlesex Hospital Medical School
- j. Charing Cross Hospital Medical School
- k. Royal Free Hospital School Medicine
- l. St. Mary's Hospital Medical School
- 917-08 Faculty Medical Victoria University Manchester, Manchester (352-08 Prior to 1-1-71)
- 917-09 Oxford University Medical School, Oxford (352-09 Prior to 1-1-71)
- 917-10 Faculty Medical University Sheffield, Sheffield (352-10 Prior to 1-1-71)
- 917-11 Registrable Qualification granted by English Conjoint Board, Royal College of Surgeons of England/Royal College of Physicians (352-11 Prior to 1-1-71)
- 917-17 Registrable Qualification granted — Society of Apothecaries of London (352-17 Prior to 1-1-71)
- 917-18 The Welsh National School Medicine, Cardiff (946-01 Prior to 1-1-71)
- 918 United Kingdom—Northern Ireland**
 - 918-01 Faculty Medicine Queens University Belfast, Belfast (539-01 Prior to 1-1-71)
- 919 United Kingdom—Scotland**
 - 919-01 Faculty Medicine University Aberdeen, Aberdeen (803-01 Prior to 1-1-71)
 - 919-02 University St. Andrews School Medicine, Dundee (803-02 Prior to 1-1-71)
 - 919-03 Faculty Medicine University Edinburgh, Edinburgh (803-03 Prior to 1-1-71)
 - 919-05 Faculty Medicine University Glasgow, Glasgow (803-05 Prior to 1-1-71)
 - 919-09 Registrable Qualification granted by Conjoint Scottish Board (803-09 Prior to 1-1-71)
- 925 Uruguay**
 - 924-01 Facultad de Medicina de la Universidad de la Republica, Montevideo
- 935 Venezuela**
 - 935-01 Facultad de Medicina Universidad Central de Venezuela Ciudad Universitaria, Caracas
 - 935-02 Facultad de Medicina Universidad de Los Andes, Merida
 - 935-03 Facultad de Ciencias Medicas Universidad Nacional del Zulia, Maracaibo
 - 935-04 Facultad de Medicina Universidad de Carabobo, Valencia
 - 935-06 Escuela de Medicina Universidad de Oriente, Bolivar
 - 935-07 Escuela de Med Jose Mara Vargas Univ Central de Venezuela, Caracas
- 938 Viet-Nam North**
 - 938-01 Faculte mixte de Medicine et de Pharmacie Universite de Hanoi, Hanoi (692-01 Prior to 1-1-71)
- 941 Viet-Nam South**
 - 941-01 Faculte mixte de Medicine et de Pharmacie Universite de Saigon, Saigon (840-01 Prior to 1-1-71)
 - 941-02 Faculte de Medicine Universite de Hue, Hue
- 946 Wales**
 - (Also see 917 United Kingdom-England-Wales Effective 1-1-71)
 - 946-01 The Welsh National School of Medicine, Cardiff
- 950 West Indies (Jamaica)**
 - (Also see 566 Jamaica Effective 1-1-71)
 - 950-01 Faculty of Medicine University College of the West Indies, Kingston, Jamaica
- 957 Yugoslavia**
 - 957-01 Medicinski Fakultet Sveucilista u Zagrebu, Zagreb
 - 957-02 Medicinski Fakultet Univerziteta u Beogradu, Beograd
 - 957-03 Fakulteta za Splosno Medicino in Stomatologijo, Ljubljana
 - 957-04 Medicinski Fakultet Univerziteta vo Skoplje, Skoplje

- 957-05 Medicinski Fakultet (Medical Faculty) Rijeka
 957-06 Medicinski Fakultet, Nis
 957-07 Medicinski Fakultet, Novi Sad
 957-08 Medicinski Fakultet Univerziteta U Sarajevo, Sarajevo

965 Zambia

965-01 University of Zambia School of Medicine, Lusaka, Zambia

999 Fifth Pathway

The Fifth Pathway is one of the conditions under which a foreign medical graduate may fulfill the admission requirements to a residency training program.

If the medical school of graduation is not listed, either the code number 100 or 200 will be used.

100

No information available as to scientific medical education.

200

Graduates of Institutions not listed as medical schools by the AMA.



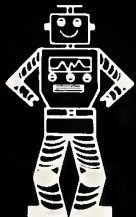
***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; **everything in order — accurately!**

***"Let
MAC
do it"***



Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215
 2300 East Lincoln, Wichita, Kansas 67211

• (913)492-8805
 • (316)261-5586

Alphabetical Listing

A

*ABBAS, OILAWER H, WICHITA
 ABBUEHL, DON R, CHANUTE
 ABOUD, NABIH I, KANSAS CITY
 *ACKROYD, ALAN W, TOPEKA
 ADAMS, AUSTIN J, WICHITA
 ADAMS JR, MARCUS W, HUTCHINSON
 AGAN, LAWRENCE M, TOPEKA
 AGUSTIN, CONRAD M, WICHITA
 AHLSTRAND, RICHARD A, WICHITA
 AILLON, ALEJANDRO J, HALSTEAD
 AKERS, GUY I, FORT SCOTT
 ALBRIGHT, JEROLD O, HUTCHINSON
 ALDERSON, THOMAS WHITNEY, GREAT BEND
 ALOIS, HENRY, FORT SCOTT
 ALOIS, WILLIAM, FORT SCOTT
 ALEXANDER, CHARLES E, KANSAS CITY
 ALEXANDER, CLOYE W, KANSAS CITY
 ALFONSO, MANUEL, WICHITA
 ALGIE, WILLIAM H, KANSAS CITY
 ALLAN, MICHAEL A, DAYTON, OH
 ALLBRITTEN JR, FRANK F, CUNNINGHAM
 ALLEN, DWIGHT EXEC DIR, WICHITA
 ALLEN, FRANCES A, NEWTON
 ALLEN, JAMES E, HAYS
 ALLEN, MAX S, KANSAS CITY
 ALLEN, MONTE L, SALINA
 ALLEN, RAY E, LIBERAL
 ALLEN, WILLIAM R, KANSAS CITY
 ALLEN JR, LEWIS G, SHAWNEE MISSION
 ALLEN JR, WILLIAM R, SHAWNEE MISSION
 *ALMONTE, RISCILLA C, WICHITA
 *ALMONTE, RODOLFO O, WICHITA
 ALONSO, RENE A, TOPEKA
 ALQUIST, VERYL O, BAXTER SPRINGS
 ALTENBERG, ELVIN CONRAD, SHAWNEE MISSION
 ALVAREZ, LUIS A, SHAWNEE MISSION
 ALVAREZ, NORBERTO, ARKANSAS CITY
 AMARE, MAMMO, KANSAS CITY
 AMAWI, MOHAMMAD S, ODOGE CITY
 AMBLER, CARL O, PRATT
 ANDERSON, DALE W, AUGUSTA
 ANDERSON, DAVID G, HUTCHINSON
 ANDERSON, DONALD S, WICHITA
 ANDERSON, EUGENE G, WICHITA
 ANDERSON, HARRY O, WICHITA
 ANDERSON, JODY, SALINA
 ANDERSON, LARRY R, WELLINGTON
 ANDERSON, LYLE B, GREAT BEND
 ANDERSON, SEVERT A, CLAY CENTER
 ANDERSON, WINSTAN L, LAWRENCE
 ANNAMALAI, PERIAKAR N, MILES CITY, MT
 ANTLFINGER, THOMAS J, HUTCHINSON
 ANTRIM, PHILIP JENIFFER, ANTHONY
 ANWAR, M ZIA, LEAVENWORTH
 APPENFELLER, WILLIAM O, OSAWATOMIE
 APPLEGATE JR, FRANCIS R, HAYS
 ARAKAWA, KASUMI, KANSAS CITY
 ARENAL, ANGELA C, KANSAS CITY
 ARGO, DONALD A, MARYSVILLE
 *ARGOSINO, RODOLFO, WICHITA
 *ARMBRUSTER, ALBERT A, SHAWNEE MISSION
 ARMSTRONG, A L, TOPEKA
 ARMSTRONG, HAROLD J, PITTSBURG
 ARONOFF, MICHAEL E, OLATHE
 ARREDONDO, MARIO, TOPEKA
 ARROYO, ZEFERINO, SCOTT CITY
 ARTILES, BENJAMIN HIPOLITO, GARDEN CITY
 ARTMAN, JOHN C, HAYS
 ARTZ, TYRONE O, WICHITA
 ARVANITAKIS, CONSTANTINE, KANSAS CITY
 ARVANITAKIS, SANDA, KANSAS CITY
 ASHER, MARC A, KANSAS CITY
 ASHLEY, BYRON J, TOPEKA
 ASHLEY, SAMUEL G, CHANUTE
 ASHLEY JR, B JOHN, TOPEKA
 ASHMORE, ARTHUR L, WICHITA
 ATHON, MERRILL O, SHAWNEE MISSION
 ATKIN, JOHN O, YATES CENTER
 ATKINS JR, FLOYD L, KANSAS CITY
 ATWOOD, M OALE, KINSLEY
 AUCAR, ALFREDO, ARKANSAS CITY
 AUCHARD, VIRGIL M, LAWRENCE
 AUNINS, JOHN, WICHITA
 AUSTIN, JOHN O, GARDEN CITY
 AUSTIN, KENNETH O, GOODLAND
 AVERILL, STUART C, TOPEKA
 AVER, AGNES, PARSONS
 AVES, RENATO B, PARSONS
 AVILA, OSCAR A, ODOGE CITY
 AYUTHIA, ISSARA I, ODOGE CITY

B

BACANI, OSWALDO, FREEDONIA
 BACON, ARTHUR H, LAKE WORTH, FL
 BADEEN, LOUIS JOHN, SHAWNEE MISSION
 BAEHR, RALPH H, TOPEKA
 BAEKE, JOHN O, SHAWNEE MISSION
 BAILEY, COLIN, HALSTEAD
 BAILEY, DONALD C, WICHITA
 BAILEY, WILLIAM A, LAWRENCE
 BAIR, ALBERT E, INDEPENDENCE
 BAIR, GLENN O, TOPEKA
 BAIR, HOWARD V, PARSONS

BAKER, FREDERICK C, TOPEKA
 BAKER, HENRY K, CHANUTE
 BAKER, PHILLIP L, TOPEKA
 BAKER, RAY O, TOPEKA
 BAKER, RICHARD B, MANHATTAN
 BALANOFF, ARNOLD Z, SHAWNEE MISSION
 BALL, RALPH G, MANHATTAN
 BANKS, ROBERT E, PAOLA
 BANSAL, SATISH C, SHAWNEE MISSION
 BARBA, ANTONIO P, WICHITA
 *BARBA, ESTRELLA G, WICHITA
 BARBER, JAMES L, AUGUSTA
 BARBERA, RORTER E, INDEPENDENCE
 BARE II, CHARLES E, OLATHE
 BARKER, BENJAMIN W, WICHITA
 BARKER, ELIZABETH B, SHAWNEE MISSION
 BARKER, JAMES BERTON, SHAWNEE MISSION
 BARKER, PATRICK N, PRATT
 BARKER, ROYAL A, COUNCIL GROVE
 BARNARD III, JAMES A, GARDEN CITY
 BARNES, MARIAN, FT LAUDERDALE, FL
 BARNETT, ARNOLD M, WICHITA
 BARNHART, RONALD J, SHAWNEE MISSION
 BARNHILL, C ALTON, TOPEKA
 BARNHORST, DONALD A, KANSAS CITY
 BARR, RICHARD N, SHAWNEE MISSION
 BARRICK, BRUCE, SHAWNEE MISSION
 BARRY, DAVID R, LEAVENWORTH
 BARTLETT, WAYNE C, WICHITA
 BASCOM, GEORGE S, MANHATTAN
 BASER, ALI N, BILOXI, MS
 BASHAM, JAMES J, FORT SCOTT
 BASS II, ORAL E, WICHITA
 BASS JR, LEWIS M, KANSAS CITY
 BATES, MICHAEL D, WICHITA
 BATNITZKY, SOLOMON, KANSAS CITY
 BATTY, THOMAS V, SHAWNEE MISSION
 *BAUCOM, KARAN YVONNE, TOPEKA
 BAUDE, EUGENE L, ANDRE, TOPEKA
 BAUER, THOMAS A, HUTCHINSON
 BAUM, ARNOLD M, ODOGE CITY
 BAUMAN, M LEON, WICHITA
 BAUMANN, PAUL A, WICHITA
 BAXTER, W REESE, SALINA
 BAYLES, HUGH G, FREEDONIA
 BEACH, RICHARD R, TOPEKA
 BEAHM, ANDL W, GREAT BEND
 BEAHM, DONALD E, GREAT BEND
 BEAHM, EDGAR H, INDEPENDENCE
 BEAL, RAYMOND J, FREEDONIA
 BEALE, DAVID A, TOPEKA
 BEATTY, JAMES R, TOPEKA
 BEAVER, JAMES L, WICHITA
 BEBAC, DONALD M, WICHITA
 BECK, JOSEPH G, TOPEKA
 *BECKER, KARL EDMUND, WICHITA
 BECKER, LESLIE E, KANSAS CITY
 BEEDFORD, D R, TOPEKA
 BEEBE, EDWARD, OLATHE
 BEELMAN, FLOYD C, TOPEKA
 BEGGS, DAVID F, GARDEN CITY
 BEHLING, HELMUT H, BEEDFORD, MA
 BEHRHORST, CARROLL O, GUATEMALA
 BEIDERWELL, PAUL L, BELLEVILLE
 BELCHER, GEORGE D, COLUMBUS
 BELL, DELORIS J, SHAWNEE MISSION
 BELL, JOHN O, GALVESTON, TX
 BELL, MARGARET E, APO NEW YORK, NY
 BELLAR, RALPH E, HARPER
 BELLER, WILLIS L, TOPEKA
 BELDT JR, MONTE L, LAWRENCE
 BELT, ROBERT JULIAN, KANSAS CITY
 BELZER, EDWARD G, SHAWNEE MISSION
 BENA, JAMES H, PITTSBURG
 BENAGE, JOHN F, FORT SCOTT
 BENNETT, CHARLES A, LEAVENWORTH
 BENNETT EXEC SE, ALLIENE, SHAWNEE MISSION
 BENTON, JAY S, NEWTON
 *BENZ, LAURIE J, WICHITA
 BERGIN, JAMES J, KANSAS CITY
 BERKEY, VERNON A, PITTSBURG
 BERKLEY, DON M, ARILENE
 BERKLEY, NORMAN W, SENECA
 BERLAND, DAVID I, TOPEKA
 BERNER, NEAL E, WAKEENY
 BEST, JOHN F, KANSAS CITY
 BETHEL, CHANDLER S, WICHITA
 BEUGELSDIJK, HENRY PETER, HALSTEAD
 BHARGAVA, ASHOK KUMAR, LACROSSE
 *BHARGAVA, BAIKUNTH N, WICHITA
 *BIHLMEIER, FRANKLIN G, KANSAS CITY
 BIERI, PETER V, LAWRENCE
 BIERLEIN, KENNETH J, PITTSBURG
 BIERMANN, ALOYSIUS H, GARDEN PLAIN
 BIERMANN, HENRY J, WICHITA
 BIERMANN, WILLIAM J, WICHITA
 BIGGS, OENNIS, ARILENE
 RIGLER, F CALVIN, GARDEN CITY
 BIGONGIARI, LAWRENCE R, KANSAS CITY
 BIKALES, VICTOR WILLIAM, SHAWNEE MISSION
 BILLINGS, THOMAS, MCPHERSON
 BILLINGSLEY, THAD H, KANSAS CITY
 BINYON, KERNIE W, WICHITA
 BISHOP, FRANCIS E, SHAWNEE MISSION
 BISHOP, RODNEY LEE, LAWRENCE

BITTENBENDER, LEE R, LAWRENCE
 BITZER, P A, WASHINGTON
 BLACK, CYRIL V, PRATT
 BLACK, JAMES F, HONOLULU, HI
 BLACK, WILLIAM L, APO NY, NY
 BLACKBURN, ROBERT W, COUNCIL GROVE
 BLAIR, T RICHARD, LAWRENCE
 BLAKE, HENRY S, TOPEKA
 BLANK, JOHN N, HUTCHINSON
 BLAYLOCK, HOYT C, WICHITA
 BLETZ, DONALD B, OVERLAND PARK
 BLISS, JOY V, OLATHE
 BLOOD, MARY J, WICHITA
 BLOOM, L THEIL, KINGMAN
 BLOUSTEIN, PAUL A, WICHITA
 BOESE, KENNETH M, MANHATTAN
 BOGGAN, MICHAEL O, KANSAS CITY
 BOLES, J MICHAEL, SHAWNEE MISSION
 BOLES, R DALE, ODOGE CITY
 BOLINGER, ROBERT E, KANSAS CITY
 BOLLMAN, CHARLES S, JUNCTION CITY
 BOLT, MICHAEL, WICHITA
 BOLTON, VICTOR E, KANSAS CITY
 BONO, ROGER C, WICHITA
 *BONEBRAKE, CHARLES RICHARD, TOPEKA
 *BOREL, DAVID, TOPEKA
 BORGENDALE, LLEWELLYN V, WAMEGO
 BORKLUND, MAURICE K, PARSONS
 BORRA, MARIO J, HUTCHINSON
 BOS, NORMAN C, HUTCHINSON
 BOSILEVAC, FRED N, KANSAS CITY
 BOSILJEVAC, JOSEPH E, WICHITA
 BOSSE, FRANK K, ATCHISON
 BOSWELL, M CRAIG, KANSAS CITY
 BOUDET, ROBERT A, KANSAS CITY, MO
 BOUDREFAUX, VELTIN J, HALSTEAD
 BOWEN, CLOVIS W, TOPEKA
 BOWEN JR, HARRY J, TOPEKA
 BOWMAN, HAROLD S, WICHITA
 *BOYO, SPENCER H, TOPEKA
 BOYO, Z REX, WICHITA
 BOYDEN, MARY S, LAWRENCE
 BOYER, ROBERT E, KINGMAN
 BOYLE, HUGH H, WICHITA
 BRACKETT JR, CHARLES E, KANSAS CITY
 BRAOEN, BILL L, WAMEGO
 BRAOLEY, J RUSSELL, EMORRIA
 BRAOLEY, J RODERICK, GREENSBURG
 BRADY, CHARLES S, ATCHISON
 BRAKE, DAVID, WICHITA
 BRALEY, JACK A, O.D., ARKANSAS CITY
 BRANDSTEDT, ERNEST C, MCPHERSON
 BRANSON, VERNON L, LAWRENCE
 BRAUN, EDWARD W, FORT SCOTT
 BRAUN, KENNETH, WICHITA
 BRAUN, THOMAS G, WICHITA
 BRAUN, WILLIAM T, PORT ORANGE, FL
 BRAUN III, WILLIAM T, WICHITA
 BRAUNSDORF, ROBERT L, TOPEKA
 BRAVERMAN, DAVID ELLIOTT, SHAWNEE MISSION
 BRAY, AVIS PAGE, CONCORDIA
 BRAY, E DEAN, LAWRENCE
 BRECKBILL, DAVID L, WICHITA
 BRENNER, WILLIAM R, LARNED
 BRETHOUR, LESLIE J, JUNCTION CITY
 BREWER, MARSHALL A, ULYSSES
 BRIAN, ROBERT M, EL DORADO
 BRIBACH, EUGENE J, ATCHISON
 BRIDGENS, JAMES G, SHAWNEE MISSION
 BRIDWELL, RUSSELL E, TOPEKA
 BRILLHART, MAXINE T, KANSAS CITY
 BRINTON, E HOLMES, WICHITA
 BRINTON, EDWARD S, WICHITA
 BRITO, RAUL E, WICHITA
 *BROCHER, TORIAS, TOPEKA
 BROCKHOUSE, JOHN R, EMORRIA
 BROOKER, ROBERT M, TOPEKA
 BROOKS, WILLIAM HENRY, KANSAS CITY
 BROSIUS, FRANK C, WICHITA
 BROUCEK, FRANCIS J, TOPEKA
 BROWN, ALEX L, CLEARWATER, FL
 BROWN, C EVERETT, STAFFORD
 BROWN, C RIFF, GREAT BEND
 BROWN, DAVID J, WICHITA
 BROWN, FRED E, ST MARYS
 BROWN, RAUL W, OLATHE
 BROWN, ROBERT L, WICHITA
 BROWN, ROBERT M, MANHATTAN
 BROWN, ROBERT O, ATCHISON
 BROWN, ROBERT WAYNE, SALINA
 BROWN, RONALD C, WICHITA
 BROWN, RONALD L, WICHITA
 BROWN, VAL J, WICHITA
 BROWN, VIRGIL E, Sabetha
 BROWN, WILLIAM R, SHAWNEE MISSION
 BROWN-SANDERS, CAROLINE, LEES SUMMIT, MO
 BROWNING, WILLIAM H, WICHITA
 BROWNTRIGG, RICHARD L, ODOGE CITY
 BRUMMETT, RICHARD R, SALINA
 BRUNER, STEVEN C, LAWRENCE
 BRUNER JR, KENNETH W, WICHITA
 BRUNGART, BERNARD A, SALINA
 BRUND, JAMES W, GARDEN CITY
 BRYAN, EMERY C, ERIE
 BRYANT, HOMER L, COFFEYVILLE
 BUBB, STEPHEN K, KANSAS CITY

* Probationary members.

BUBECK, RALPH W, WICHITA
 BUCHNER, DAVIO M, INDIANAPOLIS,IN
 BUCK JR, BEN H, WICHITA
 BUCK JR, HENRY W, LAWRENCE
 BUDETTI, JOSEPH A, HOLLYWOOD,FL
 BULA, RALPH E, HAYS
 BULLOCK, HAROLD O, INDEPENDENCE
 BUNKER JR, HERBERT L, JUNCTION CITY
 BURDICK, BRUCE M, MANHATTAN
 BURGER, J DALE, HUTCHINSON
 BURGER, PAUL B, SHAWNEE MISSION
 BURGER, WILLIAM E, KANSAS CITY
 BURGESS, FRANK G, EMPORIA
 BURGESS, ARTHUR P, OSWEGO
 BURKE, JAMES J, FORT SCOTT
 BURKE, JOSEPH V, ATCHISON
 BURKET JR, GEORGE E, SHAWNEE MISSION
 BURKMAN, REUBEN J, CHANUTE
 BURNETT, A DEAN, HALSTEAD
 BURNEY, WILLIAM W, WICHITA
 BURPEE, JAMES F, WICHITA
 BUSCH, ANTHONY B, ODOGE CITY
 BUTCHER, ARCHIE W, ABILENE
 BUTCHER, THOMAS P, EMPORIA
 BUTH, DENNIS K, WICHITA
 BUTIN, J WALKER, WICHITA
 BUTT, MUHAMMAD, CONCORDIA
 BUTTON, JESSE H, LAWRENCE
 *BYRNE, JAMES PERRY, WICHITA

C

CABLE, THOMAS M, VERSAILLES,KY
 CAEOO, CARMELITA O, LIBERAL
 CAIN, IVAN W, SHAWNEE MISSION
 CALBECK, JOHN, GARDEN CITY
 CALDERON, JAIME, KANSAS CITY
 CALDERWOOD, WILLIAM A, SALINA
 CALIENDO JR, DANIEL J, WICHITA
 CALKINS, LARRY L, SHAWNEE MISSION
 CALKINS, W GRAHAM, KANSAS CITY,MO
 CAMERON, WILLIAM J, KANSAS CITY
 CAMPBELL, EDWARD G, EMPORIA
 CAMPBELL, FRANCES S, NEWTON
 CAMPBELL, GARLAND L, ARKANSAS CITY
 CAMPBELL, WILLIAM H, COFFEYVILLE
 CAMPION, WOODROW M, LIBERAL
 CANELLLOS, JAMES, CANTON
 CAPOOTH, L WAYNE, TOPEKA
 CAPPER, STANLEY L, WICHITA
 CARBAUGH, KENNETH W, BELLA VISTA,AR
 CAROUFF, JAY J, SHAWNEE MISSION
 CAREY, LARRY J, SHAWNEE MISSION
 CARLETON, RICHARD C, CLAY CENTER
 CARLSON, EARL V, HAYS
 CARNAHAN, ROBERT L, LAWRENCE
 CARNEY, MYRTLE S, FT WORTH,TX
 CARPENTER, PAUL R, KANSAS CITY
 CARPER, IVAN H, NEWTON
 CARPER, OWEN E, NEWTON
 CARRASCO, LENOR C, SHAWNEE MISSION
 CARREAU, ERNEST P, WICHITA
 CARRO, F AURELIO, WINFIELD
 CARSON, RICHARD CARLYLE, PITTSBURG
 CARTER, MACK A, WICHITA
 *CARTWRIGHT, LYLE B, WICHITA
 CARVER, LARRY A, TOPEKA
 CASADY, GILBERT N, HUTCHINSON
 CASEY, JAMES, HUTCHINSON
 CASEY, JOHN J, WICHITA
 CASHMAN JR, MAURICE R, TOPEKA
 CASTEEL, CHARLES K, KANSAS CITY
 CATHEY, ROBERT H, MANHATTAN
 CAUBLE, WILBUR G, WICHITA
 CAUGHRON, MICHAEL ROBERT, SHAWNEE MISSION
 CAVANAUGH, CLAIR J, GREAT BEND
 CAVANAUGH, JOHN W, TOPEKA
 CAVITT, ROBERT F, SHAWNEE MISSION
 CAWLEY, LEO P, WICHITA
 CECIL III, JOHN, HAYS
 CEDERLINO, CRANSTON JAY, SHAWNEE MISSION
 CENAC, MARK T, LEAVENWORTH
 CHAFFEE, DEAN C, ABILENE
 CHALIAN, ALEXANDER R, KANSAS CITY
 CHAMBERLIN JR, CECIL R, TOPEKA
 CHANEY, ERNIE J, BELLEVILLE
 CHANG, CHAE H, KANSAS CITY
 CHANG, FREDERIC C, WICHITA
 CHANG, SHU FANG, SHAWNEE MISSION
 CHANGPONG, SALA, GENESCO,IL
 CHAPMAN, JAMES H, WICHITA
 CHAPPAUE, WILLIAM G, INDEPENDENCE
 CHARO, FREDERICK H, WICHITA
 CHEOIAK, ELIAS, LAWRENCE
 CHEN, JOHN S, HUTCHINSON
 CHEN, TAK-MING, TOPEKA
 CHENOWETH, JOHN R, O.O., OLATHE
 CHERRY JR, ARTHUR C, TOPEKA
 CHERVEN, PHILIP L, HUTCHINSON
 CHEUNG, P W H, TOPEKA
 CHIN, TOM O, KANSAS CITY
 CHO, CHENG T, KANSAS CITY
 *CHO, SECHIN, WICHITA
 CHONKO, ARNOLD M, KANSAS CITY
 CHOTIMONGKOL, ANUPONG, ODOGE CITY
 CHOUDHURY, M HASAN, COLOWATER
 CHOW, STANLEY Y, FORT SCOTT
 CHOY, JAMES K L, TOPEKA
 CHRISTENSEN, MARION O, KIOWA

CHRISTIAN, STANLEY J, KANSAS CITY
 CHRISTMAN, CARL G, WICHITA
 CHRONISTER, BERT, NEODESHA
 CHUBB, RICHARD M, BAXTER SPRINGS
 CHUN, CHUNG S, KANSAS CITY
 CHUNG, JOHN J, SHARON SPRINGS
 CISKEY, WILLIAM J, EUREKA
 CLAASSEN, MILTON A, NEWTON
 CLARK, COURTNEY, WICHITA
 CLARK, CRAIG N, TOPEKA
 CLARK, DAVID H, WAKEENEY
 CLARK, LAURENCE A, WAMEGO
 CLARK, ORVILLE R, ST PETERSBURG,FL
 CLARK, RAY A, LAKE CHAS,LA
 CLARK, ROBERT THOMAS, PRATT
 *CLEAVER, EDGAR M, WICHITA
 CLIFTON, H DAVID, WICHITA
 CLINTON, DALE L, LAWRENCE
 CLYOE, HARRIE R, TEMPE,AZ
 COALE, LLOYD H, KANSAS CITY
 COBB, LESLIE H, MULVANE
 COCHRAN, PAUL W, TOPEKA
 COOY, OOROTHY, HAYS
 COOY, JOHN, HAYS
 COE, RICHARD O, SHAWNEE MISSION
 COFFEY, ROY B, SALINA
 *COHEN, JUSTIN THOMAS, WICHITA
 COHEN, LOUIS, TOPEKA
 COHEN, ROBERT A, SHAWNEE MISSION
 COHLMIA, JERRY B, WICHITA
 COHN, STEVEN G, KANSAS CITY
 COHNBERG, ROSELLEN E, CEDAR VALE
 COLOSMITH, DONALD C, EMPORIA
 COLE, WARD M, WELLINGTON
 COLEMAN, GARY, ABILENE
 COLEMAN, THOMAS J, WICHITA
 COLIP, F MERLYNN, NORTON
 COLLIER, HAROLD W, WICHITA
 COLLIER, WILLIAM J, MCPHERSON
 COLLINS, DEAN T, TOPEKA
 COLLINS, EDWARD JOSEPH, TOPEKA
 COLLINS, FRANCIS T, TOPEKA
 COLLINS, FRANK BUSH, WINFIELD
 COMBS, G RALPH, LEAVENWORTH
 COMBS, PETER S, LEAVENWORTH
 CONARO, CLAIR C, ODOGE CITY
 CONARO, RICHARD F, EMPORIA
 CONCEPCION JR, EUGENIO S, WICHITA
 CONNELLY, JOHN C, TOPEKA
 CONNELLY, MAURICE R, SALINA
 CONRADY, PETER A, WICHITA
 CONROY, ROBERT W, TOPEKA
 COOK, BRUCE A, KANSAS CITY
 COOK, G EDWARD, WICHITA
 COOK, JAMES O, KANSAS CITY
 COOK, O RAY, WICHITA
 COOK EXEC SEC, BYRON, TOPEKA
 COOKE, ALLAN R, KANSAS CITY
 COOMER, TYLER E, PITTSBURG
 COOPER, ARTHUR E, NORTON
 COOPER, JACK R, SHAWNEE MISSION
 COOPER, KENT J, PITTSBURG
 COOPER, LEO F, KANSAS CITY
 *COOVER, RICHARD B, TOPEKA
 COPELAND, GARY A, JUNCTION CITY
 COPENING, TELL B, IOLA
 CORBIN, MURRAY O, SHAWNEE MISSION
 CORDELL, LARRY O, SHAWNEE MISSION
 CORDEY, ROBERT L, HIGHLAND
 CORRIGAN, GEORGE F, WICHITA
 COSSMAN, F PRICE, WICHITA
 COTTON, ROBERT T, TOPEKA
 COULTER, HENRY F, SHAWNEE MISSION
 COULTER, THOMAS B, KANSAS CITY,MO
 COVERT, THOMAS J, SALINA
 COWLES, GEORGE E, WICHITA
 COWLES, GORDON T, WICHITA
 COX, JACK A, EMPORIA
 COX, ROBERT H, HAYS
 COX III, IRA L, KANSAS CITY
 COX JR, IRA, SHAWNEE MISSION
 COX JR, WALLACE F, KANSAS CITY
 COYLE, JOHN F, COFFEYVILLE
 CRAIG, CHARLES C, NEWTON
 CRAM, ERNEST R, ST FRANCIS
 CRAM JR, OLE R, LARNED
 CRAMER, GUY W, PARSONS
 CRAMM, RUSSELL E, HAYS
 CRANE, C HERBERT, MANHATTAN
 CRANE, DAVID O, WICHITA
 CRANSTON, STEPHEN D, NEWTON
 CRARY, JOHN E, TOPEKA
 CRAWFORD, ROBERT A, HUTCHINSON
 CRIST, ROBERT O, KANSAS CITY
 *CRISWELL, WILFORD LOUISE, WICHITA
 CROCKETT, CHARLES A, KANSAS CITY
 CRONEMEYER, RICHARD L, KANSAS CITY,MO
 CRONIN, DONALD J, WICHITA
 CROUCH, CAPT STEVEN W, ODOVER,OE
 CROUCH, WILLIAM H, TOPEKA
 CROW, ERNEST W, WICHITA
 CROWLEY, EDWARD X, WICHITA
 CULP, LOUIS M, KANSAS CITY
 CULTRON, FRANK T, SALINA
 CULVER, WARREN T, LAWRENCE
 CUMMINGS, RICHARD J, WICHITA
 CURRAN, KEVIN E, SHAWNEE MISSION

D

D*SOUZA, BISMARCK C, SALINA

DAEHNKE, SIGURO S, WINFIELD
 DAHL, ASHER W, COLBY
 DANIELS, ROBERT M, VALLEY CENTER
 DARR, RICHARD B, KANSAS CITY
 DAUGHERTY, ROBERT M, MEAOE
 DAVENPORT, S SCOTT, WICHITA
 DAVISON, HARRY T, WICHITA
 DAVIS, CHESTER R, TOPEKA
 DAVIS, CHRISTOPHER G, KANSAS CITY
 DAVIS, DAVID H, LARNED
 DAVIS, DAVID R, EMPORIA
 DAVIS, GEORGE R, ELLSWORTH
 *DAVIS, PAUL H, WICHITA
 DAVIS, RICHARD E, SHAWNEE MISSION
 DAVIS, RONALD B, WICHITA
 DAVIS JR, JAMES W, KANSAS CITY,MO
 *DAY, HOWARD, WICHITA
 DAY, HUGHES W, KANSAS CITY
 DE BAKKER, JAN B, WICHITA
 DE BRIERE, SIONIE L, PARSONS
 DE SMET, ARTHUR AUGUST, KANSAS CITY
 DE SOIGNE, RAPHAEL R, TOPEKA
 DE SOUZA, DERRICK J, LEAVENWORTH
 DECHAIRD, THOMAS, WESTMORELAND
 DECKER, DONALD O, HALSTEAD
 DECKERT, ROSALIE E, WICHITA
 DEGNER, JAMES B, GREAT BEND
 DEITZ, MICHAEL R, KANSAS CITY
 DEJONG, DAVID C, WICHITA
 DELGAODO, SERGIO, TOPEKA
 DELLETT, KENNETH B, EL DORADO
 DELP, MAHLON H, SHAWNEE MISSION
 DELPHIA, ROBERT E, OLATHE
 DEMOSS, ELEANOR P, WICHITA
 DEMOTT, WAYNE R, KANSAS CITY
 DENISON, TERRY R, SHAWNEE MISSION
 DEPENBUSCH, FRANCIS L, HUTCHINSON
 DEPOE, JOSEPH H, WINFIELD
 DERRINGTON, KENNETH L, SHAWNEE MISSION
 DETAR, GEORGE F, IOLA
 DIACON, JAMES L, WELLINGTON
 DIALLO, GASTON I, KANSAS CITY
 DICK, ARTHUR R, KANSAS CITY
 DICK, WILLIS G, IOLA
 DICK JR, HENRY J, CHANUTE
 DICKINSON, CHARLES R, COFFEYVILLE
 DIEDERICH, DENNIS A, KANSAS CITY
 DIEHL, ANTONI M, KANSAS CITY,MO
 DIENER, CLAYTON H, HESSTON
 DILL, RODNEY SIONIE, ATWOOD
 DIVER, ROBERT W, BLOOMING
 DIXON, RAYMOND W, COFFEYVILLE
 DLBAL, FRANK A, WILSON
 DOBRATZ, ROBERT A, BELOIT
 DOCKHORN, ROBERT J, SHAWNEE MISSION
 DOHERTY, WILLIAM R, SHAWNEE MISSION
 *DOLAN JR, PHILIP JARVIS, WICHITA
 DONAHOE, DONALD H, MEAOE
 DONNELLY, JAMES M, WICHITA
 DONNELLY, FRANCIS M, KANSAS CITY
 DODRNBOS, J FRED, WICHITA
 DOUBEK, HERBERT O, BELLEVILLE
 DOUGHERTY, THOMAS M, GARNETT
 DOUGLAS, JOSEPH MAHLO, OLATHE
 DOWELL, JAMES C, SALINA
 DOWNING, GREGORY, WICHITA
 DOZIER, FRED S, HERINGTON
 DRAEMEL, H RICHARD, SALINA
 DRAKE, DOUGLAS J, BELOIT
 DRAKE, RALPH L, WICHITA
 DREHER, HENRY S, SALINA
 DRENICK, FRANCES EXEC SEC, PITTSBURG
 DREVETS, CURTIS C, WICHITA
 DRIGGS, GUY K, WICHITA
 *DROUET, ROBERT L, WICHITA
 DUCKETT, THOMAS G, HIAWATHA
 DUCKETT II, THOMAS G, SHAWNEE MISSION
 QUICK, GREGORY, WICHITA
 DUJOVNE, CARLOS A, KANSAS CITY
 DUNAGIN, JACK A, TOPEKA
 DUNLAP, RICHARD L, LAWRENCE
 DUNN, DANIEL R, COLBY
 DUNN, MARVIN L, KANSAS CITY
 DUNSHIE, CARLYLE M, FORT SCOTT
 DURAND, ANTONIO C, WICHITA
 DURKEE, WILLIAM R, MANHATTAN
 DUYSAC, SAMI, LEAVENWORTH
 *DOWRZACK, DAVID L, WICHITA
 DYCK, ARTHUR H, MCPHERSON
 DYCK, CORA E, WICHITA
 DYCK, GEORGE, WICHITA
 DYER, VERNON E, WICHITA

E

EASTES, GARY DEAN, HALSTEAD
 EATON, GLEN E, SALINA
 EATON, LESLIE F, SALINA
 ECKART, DE MERLE E, HUTCHINSON
 ECKERT, WILLIAM G, WICHITA
 EODY, VICTOR M, HAYS
 EDOZD, M LUZ LUNA, COFFEYVILLE
 EDWARDS, DAVID J, EMPORIA
 EDWARDS, MANIS C, WICHITA
 EGEE, FERNANDO M, KANSAS CITY
 EGMELHOF, RICHARD H, WICHITA
 EICHMORN, FRANK O, GARDEN CITY
 ELOT, DAVID W, OLATHE
 ELOT, LAURENCE A, OLATHE

* Probationary members.

EIKERMANN, WILLIAM C. SHAWNEE MISSION
 ELOER, DOUGLAS M. TOPEKA
 ELLEOGF, E FRED. GREAT BEND
 ELLIS, HARVEY D. WICHITA
 ELLIS, STEPHEN S. COFFEYVILLE
 ELLISON, PAUL O. SALINA
 ELMEN, WALTER T. WICHITA
 EMERY, FRANK A. WICHITA
 EMMOT, WILLIAM W. INDEPENDENCE
 EMPSON, CHARLES L. INDEPENDENCE
 ENBERG, ROBERT, HAYS
 ENOERS, WRAY, SHAWNEE MISSION
 ENNS, EUGENE K. NEWTON
 ENNS, JAMES H. NEWTON
 ENRIQUEZ, ROMAN, HOWARD
 ENS, GERHARD GEORGE, HILLSBORO
 ENS, PETER, HILLSBORO
 ENSEY, T. CRANFORD, MARION
 ERICKSON, CLARENCE W. PITTSBURG
 ERKEN, RONALD V. WICHITA
 ESCH, JOHN G. PITTSBURG
 ESRIQ, HAROLD L. O.D., SHAWNEE MISSION
 ESTES, NORMAN CLEON, KANSAS CITY, MO
 ETZENHOUSER III, RUSSELL D. SHAWNEE MISSION
 EVANS, FARRIS D. WICHITA
 EVANS, GRANT E. WICHITA
 EVANS, KENNETH L. SHATTUCK, OK
 EVANS, WILLIAM R. GREAT BEND
 EVANS JR, WILLIAM E. SHAWNEE MISSION
 EWING, THOMAS D. LARNED
 *EYSTER, ROBERT L. WICHITA

F
 FABIAN, CARL J. KANSAS CITY
 FAIRCHILD, JOHN A. MANHATTAN
 FALTER, RICHARD T. HUTCHINSON
 FARHA, GEORGE J. WICHITA
 FARHA, S. JIM, WICHITA
 FARRAR JR, WILLIAM H. ARKANSAS CITY
 FAST, ROBERT E. ATCHISON
 FAST, W. SPENCER, ATCHISON
 FEAGAN, JERRY, TOPEKA
 FEIGHNY, ROBERT E. SAN ANTONIO, TX
 FELT, SAMUEL E. KANSAS CITY, MO
 FENDER JR, THOMAS H. WICHITA
 FENT, LEE S. NEWTON
 FENTON, ROBERT M. GARDEN CITY
 FERNANDEZ, LUIS A. TOPEKA
 FERNIE, ROBERT W. HUTCHINSON
 FERRE, RICHARD ALLAN, MCPHERSON
 FERRIS, ERUCE G. WICHITA
 FESTOFF, BARRY W. KANSAS CITY, MO
 *FEUILLE JR, EDMOND G. WICHITA
 FIELD, RICHARD A. TOPEKA
 FIELDMAN, E. JAY, SAN DIEGO, CA
 FIELDS, GALEN W. SCOTT CITY
 FIESER, CARL W. GREAT BEND
 FILLEY, VERNON W. TOPEKA
 FILLMAN, ELMON M. TOPEKA
 FINK, ABRAHAM A. PLANTATION, FL
 FINLEY, DENNIS R. WICHITA
 FIRKINS, RICHARD T. WICHITA
 FISCHER, REX R. MANHATTAN
 FISHER, JAMES B. WICHITA
 *FITCH, ROBT ELLSWORTH, TOPEKA
 FITZGERALD, EARL JAMES, ATWOOD
 FITZGERALD, EDWARD J. WICHITA
 *FITZIG, SANFORD, WICHITA
 FITZPATRICK, W. ROBERT, KANSAS CITY
 FIXLEY, MARK S. KANSAS CITY
 FLANDERS, H. ALDEN, HAYS
 FLECKENSTEIN, CHARLES S. WICHITA
 FLEMING, FORNEY W. WICHITA
 FLOERSCH, HUBERT M. KANSAS CITY
 FLOWERS JR, CLELL B. WICHITA
 FORD, CHARLES R. WICHITA
 FORD, FRED L. TOPEKA
 FORDYCE, NORMAN, SHAWNEE MISSION
 FORET, JOHN D. KANSAS CITY
 FORREO JR, WALTER A. HARPER
 FORSTER JR, LOUIS G. SALINA
 FORTUNE, CECIL B. OLATHE
 FOSS, DANIEL C. HUTCHINSON
 FOSTER, CHARLES G. TOPEKA
 FOSTER, O. BERNARD, TOPEKA
 FOWLER, ROBERT J. WICHITA
 FOWLER, WAYNE L. CONCORDIA
 FOX, DEANNA K. KANSAS CITY
 FOX, HOWARD A. KANSAS CITY
 FRANCIS, NORTON L. WICHITA
 FRANCISCO, CLARENCE L. SHAWNEE MISSION
 FRANCISCO, EDGARDO, HORTON
 FRANCISCO, W. DAVID, KANSAS CITY
 FRANSEN, HERBERT, NEWTON
 FRANSEN, PAUL H. NEWTON
 FRANZ, ROBERT G. HILLSBORO
 FRAZIER, RICHARD L. EMPORIA
 FREDERICK, M. F. HUGOTON
 FREDRICKSON, DUANE E. LINOSBORO
 FREEBORN JR, WARREN S. CLYDE
 FREEMAN, F. GILES, PRATT
 FREEMAN, FRED A. MANHATTAN
 FREEMAN, RAYMOND S. SALINA
 FRIESEN, DALE, LAWRENCE
 FRIESEN, FLORENCE V. MESSTON
 FRIESEN, ORLANDO J. BUMLER
 FRIESEN, STANLEY R. KANSAS CITY
 FRIGGERI, ROBERT W. GIRARD

FRITZ, GEORGE E. WICHITA
 FRITZMEIER, WILLIAM F. WICHITA
 FROMM, ARTHUR H. WICHITA
 FRY, LUTHER L. GARDEN CITY
 FULLER, JERYL G. SHAWNEE MISSION
 FULLER, DERYL D. LINOSBORO
 FULTON, JOHN K. WICHITA
 FUNK, EDWARD O. KANSAS CITY
 *FUSILLD, MICHAEL, TOPEKA

G

GABBARD, GLENN OWENS, TOPEKA
 *GAINES, LARRY STRAUER, CHARLESTON, SC
 GALICIA, JOSEPH P. WICHITA
 GALLEHUGH, KEITH W. KANSAS CITY
 GALVAN, ALONSO, WICHITA
 GANDHI, SHANTIKUMAR K. TOPEKA
 GANN, E. LAMONTE, EMPORIA
 GANS, FREDERICK A. SALINA
 GANZARAIN, RAMON C. TOPEKA
 GARCIA, GOULD C. EMPORIA
 GARDINER, TED W. GARDEN CITY
 GARDNER, BILLIE L. HARPER
 GARDNER, GLENN M. SHAWNEE MISSION
 GARDNER, JAMES O. MANHATTAN
 GAREY, WILLIAM JOHN, INDEPENDENCE
 GARWOOD, JAN, LYONS
 GATENO, JOSEPH, GREAT BEND
 GAY, JOHN O. TOPEKA
 GEHRT, EARL B. CHANUTE
 GEITZ, JAMES M. EMPORIA
 GELVIN, E. RAYMOND, CONCORDIA
 GENCH, RAYMOND L. CARMEL, CA
 GENOFL, JOSEPH E. TOPEKA
 GENILO, AMANCIO C. WICHITA
 *GENILO, CELESTE A. WICHITA
 GENTRY, KALE C. SHAWNEE MISSION
 GEORGE, EARL F. WICHITA
 GEORGE, M. DON, WICHITA
 *GERBER, ALLEN D. WICHITA
 GERBER, HARRY A. LEAVENWORTH
 GERJARUSAK, PRAPAS, LEAVENWORTH
 GESSLER, DONALD J. WICHITA
 GETTLER, DEAN T. FORT SCOTT
 GIBBS, EUGENE, COFFEYVILLE
 *GIESSEL, MICHAEL O. TOPEKA
 GILBERT, J. HOWARD, SENECA
 GILBERT, ROBERT A. SHAWNEE MISSION
 GILBERT II, JOHN H. GARFON CITY
 GILHOUSEN, FREDERIC M. KANSAS CITY
 GILL, GEORGE L. LAWPE, MO
 GILLEN, BILLY A. SHAWNEE MISSION
 GILLES, HELEN M. LAWRENCE
 *GILMARTIN, RICHARD C. WICHITA
 GILMORE, CLARENCE A. KANSAS CITY
 *GIMPLF, KENNETH, TOPEKA
 GINAVAN, DUANE F. EMPORIA
 GIROD, CHARLES I. EL DORADO
 GIWNER, DAVID, WICHITA
 GLAZZARD, CHARLES D. OLATHE
 GLEASON, JIMMIE A. TOPEKA
 GLENN, JAMES N. EMPORIA
 GLENN, LYLE G. PROTECTION
 GLOVER, RICHARD M. NEWTON
 GNAU, FREDRIC B. HALSTEAD
 GODFREY, KENNETH E. TOPEKA
 GODFREY, ROBERT G. KANSAS CITY, MO
 GODFREY, WILLIAM A. KANSAS CITY
 GOODWIN, PHILLIP A. LAWRENCE
 GOERING, DONALD O. COLOWATER
 GOERING, EMIL L. TOPEKA
 GOERING, ROBERT C. WICHITA
 GOERTZ, LEO R. KANSAS CITY
 *GOLD, JAY M. WICHITA
 GOLOBERG, HERBERT R. WICHITA
 GOLLERKERI, ROMAN P. SHAWNEE MISSION
 GOLLIER, ROBERT A. OTTAWA
 GOLLIER II, ROBERT A. OTTAWA
 GOMEZ, FRANCISCO, SHAWNEE MISSION
 GOMEZ, MODESTO S. PITTSBURG
 GONZALEZ, FRANCISCO, WICHITA
 GONZALEZ, HIRAM, WICHITA
 GOOD, JAMES T. FORT SCOTT
 GOOD, WENDELL LISLE, SHAWNEE MISSION
 GOODIN, ETHELYNN A. ALEXANDRIA, LA
 GOODIN, WALKER O. ALEXANDRIA, LA
 GOODPASTURE, HEWITT C. WICHITA
 GOODPASTURE, WILLARD C. HUTCHINSON
 GOODWIN, DONALD W. KANSAS CITY
 GOOTEE, JOSEPH E. TOPEKA
 GOTO, HIROSHI, KANSAS CITY
 GOULONER, RENE M. WICHITA
 GOYLE, KRISHAN K. WICHITA
 GOYLE, VIMAL, WICHITA
 GRADINGER, BILLENS C. *AR
 GRADY, KENNETH L. KANSAS CITY
 GRAHAM, J. MALCOLM, LEAVENWORTH
 GRAHAM, KENNETH L. LEAVENWORTH
 GRAHAM, THOMAS W. LEAVENWORTH
 GRAHAM JR, CHARLES P. TOPEKA
 GRANTHAM, JARED J. KANSAS CITY
 GRAUEL, CHARLES W. WICHITA
 GRAVES, JACK W. WICHITA
 GRAY, C. LUCIEN, WICHITA
 GRAY, CAPTAIN KING, LAWRENCE
 GRAY, DAVID E. TOPEKA
 GRAY, H. TOM, WICHITA
 GRAYB, ANTOINE S. TOPEKA
 GRAYSON, ROY O. ALBUQUERQUE, NM
 GREEN, LAWRENCE C. ARKANSAS CITY

GREENBERG, GEORGE E. GARDEN CITY
 GREENBERG, MARK, TOPEKA
 GREENBERGER, N. J. KANSAS CITY
 GREENF, HORACE T. TOPEKA
 GREENWOOD, EDWARD D. TOPEKA
 GREENWOOD, JAMES F. ULYSSES
 *GREER, JAMES A. WICHITA
 GREER, RICHARD H. TOPEKA
 GRIBBLE, ROBERT N. WICHITA
 GRIFFING, RICHARD B. SALINA
 GRIFFITH, FRANK H. SALINA
 GRIGSBY, KENNETH R. SUN CITY, AZ
 GRIGSBY JR, GEORGE T. TOPEKA
 GRILLOT, FLOYD B. WICHITA
 GRIMALDI, GARY A. FORT SCOTT
 GRIMES, I. ROSS, LIBERAL
 GRIMES, JAMES T. LYONS
 GRIPKEY, CLARENCE A. KANSAS CITY
 GRISOLIA, ANDRES, LEAVENWORTH
 GRISWOLD, DOLF G. NEWTON
 GROHS, HEINZ K. WICHITA
 GROVE, JOHN A. NEWTON
 GROWNNEY, JOHN T. ATCHISON
 GRUENDEL, RICHARD A. KANSAS CITY
 GRUENDEL, VIRGINIA T. KANSAS CITY
 GRUND, FRANK M. WICHITA
 GRUSHNYS, ARNOLD, WICHITA
 GSELL, GEORGE F. WICHITA
 GUERRA, TOMAS H. MARION
 GUMUCIO, MARIO L. BOLIVA
 GUNN, MARVIN R. SALINA
 GUNTER, CARL C. QUINTER
 *GUNTHER, LORETTA ANN, WICHITA
 GUTHRIE, RICHARD A. WICHITA
 *GUTOVITZ, ALLEN LOUIS, TOPEKA
 GUZMAN, MANUEL, SALINA

H

HA, SANG W. COFFEYVILLE
 HAAS, CHARLES D. KANSAS CITY
 HAAS, JUDITH S. SHAWNEE MISSION
 HABERSANG, ROLF W. O. KANSAS CITY
 HACKER, DAVID CHARLES, SHAWNEE MISSION
 HADLEY, OELMONT C. OTTAWA
 HAFNER, WILLIAM N. EL DORADO
 HAGAN, C. THOMAS, WICHITA
 HAGAN, FRANCIS J. WICHITA
 HAGGAN, MARGARET E. LAWRENCE
 HAIGLER, JAMES P. HAYS
 HAINES, CHESTER W. HAVEN
 *HALASWAMY, HANAGAVADI S. TOPEKA
 HALE, RALPH, WICHITA
 *HALL, J. ROGER, WICHITA
 HALL, JERRY D. ANTHONY
 HALL, WESLEY H. GIRARD
 HALL, DO. KENDALL W. GARDNER
 HALLEY, M. MARTIN, TOPEKA
 HALLING, L. WILLIAM, HAYS
 HALPIN, EDWARD D. WICHITA
 HALVORSON, HOWARD C. OLATHE
 HAMILTON, JAMES J. WAKEENEY
 HAMILTON, NORMAN G. TOPEKA
 HANN, ORVAL L. SIALKOT, INDIA
 HANNEKE, JOHN C. LEAVENWORTH
 HANWEL, GEORGE W. BELLA VISTA, AR
 HAMIL, LAWRENCE R. SHAWNEE MISSION
 HAN, CHAN S. COFFEYVILLE
 HANCOCK, ALAN C. KANSAS CITY
 HANSA, HANSA, HAYS
 HANSON, DAVID C. IDLA
 HARA, GLENN S. KANSAS CITY
 HARBIN, GARY LYNN, KANSAS CITY
 HARD, BENJAMIN F. SHAWNEE MISSION
 HARDIN, CREIGHTON A. KANSAS CITY
 HARMS, ALBERT C. SHAWNEE MISSION
 HARMS, EDWIN M. WICHITA
 HARMS, WILMER A. HALSTEAD
 HARNED, BERT W. OLATHE
 HARPSTER, GENE O. SHAWNEE MISSION
 HARRIS, FRANK H. WICHITA
 HARRIS, HUBERT L. TOPEKA
 HARRIS, NORMAN R. SALINA
 HARRIS, NORVAN D. LIBERAL
 HARRIS, PATRICIA A. TOPEKA
 HARRIS JR, CLAIB B. GARNETT
 HARRISON, A. BROOKS, WICHITA
 HARRISON, MALL E. TOPEKA
 *HARRISON, PAUL BARRY, WICHITA
 HART, OILLIS L. WICHITA
 HART, LAWRENCE E. ATCHISON
 *HART JR, PAUL VINCENT, TOPEKA
 HARTLEY, FOUNT K. HONOLULU, HI
 HARTMAN, CHARLES R. KANSAS CITY
 HARTMAN, GERALD V. KANSAS CITY
 HARTMAN, ROGER L. NORTON
 HARTOCOLLIS, PETER, TOPEKA
 HARTONG, WILLIAM ALLEN, SHAWNEE MISSION
 HARVEY, JOHN E. EMPORIA
 HARVEY, ROSEMARY B. WICHITA
 HARVEY, THOMAS S. WESTON, MO
 HARWOOD, CLAUDE J. GLASCO
 HASKINS, ROBERT J. CHANUTE
 HASSELLE III, JAMES E. LAWRENCE
 HASSETT, GERRARD R. COLBY
 HASTINGS, MARY T. SHAWNEE MISSION
 HATHAWAY, PETER, SHAWNEE MISSION
 HATTON, DONALD W. LAWRENCE
 HATTON, LLOYD W. SALINA
 HATRUP, RICHARD J. WICHITA

* Probationary members.

HAVENHILL II, MARSHALL A. EMPORIA
 HAWLEY, RAYMOND G. WICHITA
 HAYDEN, ABIGAIL, CONCORDIA
 HAYES, JAMES PATRICK, LYNCH, NE
 HAYES, WILLIAM L. WICHITA
 *HAYS, THOMAS H. WICHITA
 HEASTY, ROBERT G. MANHATTAN
 HEBBAR, SATYA N. TOPEKA
 HEDRICK, KENNETH E. HUTCHINSON
 HEINS, LAWRENCE G. ABILENE
 HENDERSON, CHARLES F. PARSONS
 HENDERSON, JOHN M. KANSAS CITY, MO
 HENNEBERGER, CHARLES E. ATWOOD
 HENNING, CALVIN W. OTTAWA
 HENNING, CHARLES E. WICHITA
 HENNING JR., HAROLD JOHN, KANSAS CITY
 HENSLEY JR., CLINE D. WICHITA
 HERED, JOHN, WICHITA
 HERMES, RICHARD L. LAWRENCE
 HERMUECK, ARLO S. KANSAS CITY
 HERRERA, JORGE J. TOPEKA
 HERSHORN, SIMON E. WICHITA
 HERZON, CHARLES D. SHAWNEE MISSION
 HESSE, FREDERICK J. SALINA
 HESSE, ROBERT S. WELLINGTON
 HESSER, HERBERT H. SHAWNEE MISSION
 HIEBERT, ABRAHAM E. WICHITA
 HIEBERT, DAVID L. LAWRENCE
 HIEBERT, JOHN B. TOPEKA
 HIEBERT, PETER E. KANSAS CITY
 HIESTERMAN, HERMAN W. QUINTER
 HILDYARD, VICTOR H. COLBY
 HILDYARD II, VICTOR H. COLBY
 HILL, JAMES E. ARKANSAS CITY
 HILL, JOHN J. HUTCHINSON
 HILL, PHILLIP K. HALSTEAD
 HILL, RICHARD H. MEADE
 HILL, ROBERT N. TOPEKA
 HINSHAW, ALFRED H. WICHITA
 HINSHAW, CHARLES T. WICHITA
 HINSHAW, EDGAR D. ARKANSAS CITY
 HINSHAW JR., CHARLES T. HUTCHINSON
 HINTHORN, DANIEL R. KANSAS CITY
 HIRATZKA, TOMIHARU, WICHITA
 HIRD, WAYNE E. LAWRENCE
 HIRSCHBERG, J. COTTER, TOPEKA
 HISCZYNSKY, J. ROMAN, TOPEKA
 HITCHCOCK, C. THOMAS, KANSAS CITY
 HIZON, RAMON R. WICHITA
 HOBBS, DONALD D. TOPEKA
 HOBSON, MILBURN W. SHAWNEE MISSION
 HODGES, HERBERT C. SHAWNEE MISSION
 HODGES, BRUCE E. SHAWNEE MISSION
 HODGES, GLENN R. KANSAS CITY
 HODGES, MERLE A. SALINA
 *HODGSON, ROBERT B. WICHITA
 HODSON, HERVEY R. WICHITA
 HOFER, DEWAYNE D. CONCORDIA
 HOFFER, JOHN G. MEDICINE LODGE
 HOHERZ, DAVID G. TOPEKA
 HOLCOMB, DONALD G. LOS ANGELES, CA
 HOLCOMB, WILLIAM M. LIBERAL
 HOLDCRAFT, JACQUELYNE, KANSAS CITY
 HOLDEN JR., RAYMOND F. WICHITA
 HOLDERMAN, WALLACE D. HUTCHINSON
 HOLLADAY, HARMON M. WICHITA
 HOLLADAY, KENNETH R. EUDORA
 HOLLEMAN JR., JAMES F. D.O., KANSAS CITY
 HOLMAN, JON B. SALINA
 HOLMES, FREDERICK F. KANSAS CITY
 HOLMES, GRACE E. KANSAS CITY
 HOLMES, JED, WICHITA
 HOLSINGER, DONALD M. PITTSBURG
 *HOLT, BEVLEY DAN, FT RILEY
 HOLT, JOHN M. GREAT BEND
 HOLT, ROBERT G. HALSTEAD
 HOOFFER, WILFORD D. HALSTEAD
 HODGSTRATEN, BARTH, KANSAS CITY
 HOPKINS, WILLIAM D. SHAWNEE MISSION
 HOPKINS JR., B. MORRISON, SCOTT CITY
 HOPKINS JR., LENLY T. SHAWNEE MISSION
 HOPPER, CHARLES R. EMPORIA
 HORBELT, DOUGLAS V. WICHITA
 HORNE, JAMES B. TOPEKA
 HORSEMAN, ROBERT F. SHAWNEE MISSION
 HORTON, WILLIAM A. KANSAS CITY
 HOSTETTER, PHILIP H. MANHATTAN
 *HOUSHOLDER, DANIEL FAIR, WICHITA
 HOUSHOLDER, MARTHA S. WICHITA
 HOWARD, DONALD D. WICHITA
 HOWARD II, W. ROBERT, ARKANSAS CITY
 HOWERTER JR., BERNARD E. COFFEYVILLE
 HOYLE, WINTHROP E. WINFIELD
 HOYT, ARTHUR W. TOPEKA
 HSU, CHENG H. TOPEKA
 HSU, SHIN-FU, TOPEKA
 HUAMAN, ANTONIO M. TOPEKA
 HUDSON, JAMES R. CHANUTE
 HUDSON, ROBERT P. KANSAS CITY
 HUEBERT, DEAN A. WICHITA
 HUEBNER, ROBERT STEPHAN, PITTSBURG
 HUERTER, DAVID F. PITTSBURG
 HUERTER, QUENTIN C. KANSAS CITY
 HUFF, JOHN D. KANSAS CITY
 HUFFMAN, DAVID H. KANSAS CITY, MO
 HUGHES, JOHN JAY, KANSAS CITY
 HUGHES, ROBERT WALTER, LAWRENCE
 HULL, KENNETH L. WICHITA

HULL, NORMAN E. HAYS
 HULTGREN, MYRON K. WICHITA
 HUME, JOSEPH W. WICHITA
 HUMMER, LLOYD W. WICHITA
 HUNNINGHAKE, RONALD E. MINNEAPOLIS
 HUNT, MARTHA E. EXEC S. KANSAS CITY
 HUNTER, KENNETH R. LERO
 HUNTER JR., JAMES S. MANHATTAN
 HURWITZ, ARYEH, KANSAS CITY
 HUSTEAD, ROBERT F. WICHITA
 HUSTON, FRANCIS W. WINCHESTER
 HUSTON, JOSEPH W. TOPEKA
 HUTCHINSON, DIRK T. WINFIELD
 HUTCHISON, GLEN C. HAYS
 HUTTON, FREDERICK A. TOPEKA
 HWA, EUGENE C. NEWTON
 HYDE, MARSHALL E. FT SMITH, AR
 HYLWA, THEODORE M. SHAWNEE MISSION
 HYNES, HARRY E. WICHITA

I

IBARRA, J. LUIS, WICHITA
 IBARRA, RICHARD C. KANSAS CITY
 INGHAM JR., H. LAIRD, LAWRENCE
 INGRAM, JOHN E. KANSAS CITY
 INNES, ROBERT C. KANSAS CITY
 IRBY, ADDISON C. FORT SCOTT
 IRBY, PRATT, FORT SCOTT
 ISAAC, CHARLES A. NEWTON
 ITURRALOE, GEORGE, SHAWNEE MISSION

J

JACKMAN, GLENN H. ESTES PARK, CO
 JACKS, J. WARREN, PRATT
 JACKSON, CHARLES R. WICHITA
 JACKSON, LINDA H. TOPEKA
 JACKSON, VICTOR L. ALTAMONT
 JACKSON JR., DELMAS A. SALINA
 JACOBI, KANNAMPALLY L. EL DORADO
 JACOBS, DAVID S. KANSAS CITY
 JACOBS, RAE R. KANSAS CITY
 JACOBSEN, DWIGHT SKINNER, COLBY
 JACOBY II, ROBERT E. TOPEKA
 JAHANIAN, DARYDOUSH, KANSAS CITY
 JAMBOR, JAMES J. DODGE CITY
 JAMES, VERNON L. WICHITA
 JAMES, DONALD R. SHAWNEE MISSION
 JANSEN, ERWIN T. TOPEKA
 JANZEN, HERMAN F. HILLSBORO
 JARROTT, JOHN B. HUTCHINSON
 *JAWADI, M. HUSAIN, WICHITA
 JAYARAM, MARANDAPALLI R. SHAWNEE MISSION
 JAZAYERLI, NABIL, WICHITA
 JEFFRIES, RHONDA DETERT, KANSAS CITY
 JEHAAN, SAYED S. WICHITA
 JENKINS, EDWARD, GARDEN CITY
 JENKINS, NEAL M. SALINA
 JENNEY, CHARLES B. WICHITA
 JENSEN, THOMAS M. OLATHE
 JESTER, SHELBY L. WICHITA
 JEWELL, ROSS L. ST FRANCIS
 JEWELL, WILLIAM R. KANSAS CITY
 JOHNS JR., LED E. KANSAS CITY, MO
 JOHNSON, FREDERICK E. TOPEKA
 JOHNSON, GARY L. WICHITA
 JOHNSON, HOWELL D. DODGE CITY
 JOHNSON, J. RICHARD, MCMERSON
 JOHNSON, JOHN E. KANSAS CITY
 JOHNSON, JOSEPH H. EL DORADO
 JOHNSON, PAUL D. LEAVENWORTH
 JOHNSON, THOMAS E. WICHITA
 JONES, CHARLES E. SHAWNEE MISSION
 *JONES, CLIFFORD E. WICHITA
 JONES, EDWARD L. GREAT BEND
 JONES, FDRREST H. COLUMBUS
 JONES, H. IVOR, SHAWNEE MISSION
 JONES, H. PENFIELD, LAWRENCE
 JONES JR., HERMAN H. KANSAS CITY
 JOSEPH, BRIAN W. TOPEKA
 JOSEPH, HOWARD F. LAWRENCE
 JOSS, CHARLES S. TOPEKA
 JDUVENAT, NEIL C. SHAWNEE MISSION
 JDYCE, G. BERNARD, TOPEKA
 JUBELT, HILBERT P. MANHATTAN
 JUDILLA JR., FRANCISCO, WICHITA
 JUSTUS, WILLIAM J. PLEASANTON

K

KADIAN, RAJESH S. SHAWNEE MISSION
 KADISON, HERBERT I. WICHITA
 KAGAN, STUART M. SHAWNEE MISSION
 KALBAC, RICHARD W. GARDEN CITY
 KALDOR, RICHARD H. MANHATTAN
 KALIVAS, JAMES T. KANSAS CITY
 KANE JR., WILLIAM M. HAYS
 KARDATZKE, E. STANLEY, WICHITA
 KARDATZKE, JON K. WICHITA
 KASHA, ROBERT L. WICHITA
 KASHYAP, BANSHI PRASAD, SHAWNEE MISSION
 KASSEBAUM, GLEN E. EL DORADO
 KASSEBAUM, KENNETH G. WICHITA
 KASSEL, HENRY W. LAKEWOOD, CO
 KATZ, JEROME B. TOPEKA
 KAUFFMAN, RALPH E. DETROIT, MI
 KAUFMAN, EUGENE E. WICHITA
 KAUFMAN, LELAND R. WINFIELD
 KAUFMAN, WILLARD E. MOUNDRIODE
 KAUL, ANAND N. WINFIELD
 KAVEL, KARL K. TOPEKA
 *KEARNS, NORBERT W. TOPEKA

KEENE, GEORGE H. WICHITA
 KEENY, M. GARY, WICHITA
 KELLER, JAMES P. WICHITA
 KELLY, DAN A. TOPEKA
 KELLY, ROBERT W. WICHITA
 KEMPTHORNE, CHARLES R. MANHATTAN
 KENDALL, TOM E. WICHITA
 KENDRICK, J. GILLERAN, WICHITA
 KENNEDY, GERALD T. WICHITA
 KENNEDY, HOWARD U. TOPEKA
 KENNEDY, JAMES A. KANSAS CITY
 KENNEDY, KENNETH R. SHAWNEE MISSION
 KEPES, JOHN J. KANSAS CITY
 KERBY, GERALD R. KANSAS CITY
 KESTENBAUM, THELOA M. KANSAS CITY
 KETCHUM, LYNN D. SHAWNEE MISSION
 KEYS JR., ROBERT C. TOPEKA
 KEYS SR., ROBERT C. WINCHESTER
 KHICHA, GYANCHAND J. WICHITA
 KHOURY, GEORGE H. WICHITA
 KHURANA, SATISH K. SHAWNEE MISSION
 KIFER, C. JAMES, HAYS
 KIMM, ALBERT A. CHANUTE
 KIM, JONG M. KANSAS CITY
 KIM, PAIK N. WICHITA
 KIM, YONG W. TOPEKA
 KIMBALL, RICHARD R. MANKATO
 *KIMBLE, JAMES A. WICHITA
 KIMBROUGH, VICTORIA F. LAWRENCE
 KIMURA, CHARLES C. SHAWNEE MISSION
 KINDLING, PAUL H. TOPEKA
 KING, CHARLES R. KANSAS CITY
 KING, WILLIAM T. GREAT BEND
 KINNAN, L. F. CALDWELL
 KIRBY, MERLIN G. GREAT BEND
 KIRCHMER, NANCY, KANSAS CITY
 KIRCHNER, FERNANDO R. KANSAS CITY
 KIRK, THOMAS E. MANHATTAN
 KIRK JR., E. DAVID, WICHITA
 KIRKEGAARD, RODGER S. TOPEKA
 KISER, JOHN L. WICHITA
 KISEA, WILLARD J. WICHITA
 KITCHEN, ROBERT R. WICHITA
 KLASSEN, DANIEL S. NEWTON
 *KLEINHOLZ JR., EMIL JOHN, TOPEKA
 KLEMMER, HERBERT, TOPEKA
 KLENDIA JR., MARTIN B. BELDIT
 KLINEVER, VERNON L. NEWTON
 KLINGLER JR., EUGENE A. MANHATTAN
 KNAPP, LESLIE E. WICHITA
 KNAPP, M. ROBERT, WICHITA
 KNAPPENBERGER, ROY C. WICHITA
 KNECHT, STEPHEN M. EMPORIA
 KNEIDEL, THOMAS W. WICHITA
 KNUTH, KENNETH L. KANSAS CITY
 KODANAZ, A. AYTEKIN, SHAWNEE MISSION
 KODNS, JESS W. LIBERAL
 KOSAR, CLARENCE D. CONCORDIA
 KOURI, SAMMY H. WICHITA
 KOVARIK, ERNEST D. TOPEKA
 KOZIKOWSKI, BEN M. SHAWNEE MISSION
 KRANTZ, KERMIT E. KANSAS CITY
 KRAUSE, ROLAND L. WICHITA
 KREHBIEL, MARK A. SALINA
 KROLL, HARRY G. TOPEKA
 KROLL, RICHARD, FT LEAVENWORTH
 KRUCKEMYER, ALAN L. SALINA
 KRUEGER, HAVEN C. GREAT BEND
 KRUEGER, KURT ALLEN, SHAWNEE MISSION
 *KRUPKA, JOHN J. WICHITA
 KUBIN, DORIS A. KANSAS CITY
 *KUBINA, GLENN RICHARD, WICHITA
 KUMAR, SURINDER, NEWTON
 KUNNAWUTHIDE, KAMDLITPYA, DODGE CITY
 KURTH, C. JOSEPH, WICHITA
 KURTH, ROBERT H. SHAWNEE MISSION
 KUTILEK, FRANK J. WICHITA
 KWEE, SIDOT T. KANSAS CITY
 KYNER, JOSEPH L. KANSAS CITY

L

LABHSETWAR, S. A. JUNCTION CITY
 LACEY, STEFFAN R. WICHITA
 LAFENE, BENJAMIN W. MANHATTAN
 LAHAM, ALEXANDER J. WICHITA
 LAI, JENG Y. WICHITA
 LAING, ROBERT R. KANSAS CITY
 LAIRD, DALE D. OLATHE
 LAKE, MAX S. SALINA
 *LAMBERT, EUGENE KENT, WICHITA
 LANCE, RAYMOND W. PITTSBURG
 LANCE JR., JOHN F. WICHITA
 LANSKY, LESTER L. KANSAS CITY
 LANSKY, SHIRLEY B. KANSAS CITY
 LAPI, RUTH M. SHAWNEE MISSION
 LARSON, DELBERT L. HIAWATHA
 LASLEY, DAVID A. SALINA
 LASLEY, MICHAEL B. HAYS
 LATIMER, KATHERINE, WICHITA
 LAURY, DAVID G. OTTAWA
 LAUVER, MARY ANN, WICHITA
 LAVA, CHIRUND, PARSONS
 LAW, FINDLEY, ELLINWOOD
 LAWLESS, HAROLD L. BLUE RAPIDS
 LAW, RAYMOND A. WICHITA
 LAWRY, JAMES VORIS, WINFIELD
 LAWS, LEWIS R. MARYSVILLE
 LAWSON, DWIGHT, TOPEKA
 LAWSON, ROBERT C. TOPEKA
 LAWTON, MARVIN K. CONCORDIA

LAYBOURNE JR, PAUL C, KANSAS CITY
 LAZAR, HARRY, WICHITA
 LEAKE III, HUNTER C, KANSAS CITY
 LEARNED, GEORGE R, LAWRENCE
 LEATHERS III, HOLLIS K, SHAWNEE MISSION
 LEE, JAE M, KANSAS CITY
 LEE, JOSEPH R, ASHLAND
 LEE, KYO R, KANSAS CITY
 LEE, R REX, WICHITA
 LEE, SANG DUG, WICHITA
 LEE, SONG DOO, TOPEKA
 LEE, SONG PING, TOPEKA
 LEE, YONG U, EL DORADO
 LEE JR, EDWARD S, WICHITA
 LEE JR, JAMES G, KANSAS CITY
 LEFFLER, PAUL B, PITTSBURG
 LEGASPI JR, PEDRO L, SHAWNEE MISSION
 LEGER, LEE H, BOKEELIA, FL
 *LEIFER, WILLIAM NEIL, TOPEKA
 LEIGH, LAWRENCE E, SHAWNEE MISSION
 LEISY, JERALD W, WICHITA
 LEITCH, DAVID A, GARNETT
 LEMOINE JR, ALBERT N, KANSAS CITY
 LENEVE, ROBERT T, HUGOTON
 LENSKE JR, FRANCIS X, IOLA
 LENTZ, WILLIAM R, TOPEKA
 LEO, WILLIAM A, KANSAS CITY
 LESSENDON, GLENN A, LAWRENCE
 LESSENDON JR, C M, TOPEKA
 LETTNER, HANS T, HUTCHINSON
 LEVINE, ERROL, KANSAS CITY
 *LEVINE, WILLIAM R, WICHITA
 LEVY, EDWIN Z, TOPEKA
 LEWIN, WALTER, SHAWNEE MISSION
 LEWIS, JAMES E, SHAWNEE MISSION
 LEWIS JR, H DANIEL, KANSAS CITY, MO
 LIES, BARTHEL N, COLWICH
 LIES, JAMES E, WICHITA
 LIES, RICHARD B, WICHITA
 LILLICH, DAVID WILLIAM, TOPEKA
 LIM, CARLO, SEDAN
 LIN, JOE J, WICHITA
 LIN, MAU SHONG, TOPEKA
 LINDLEY, MILTON E, WICHITA
 LINDSLEY, CAROL B, KANSAS CITY
 LINDSLEY, HERBERT B, KANSAS CITY
 LINHART, RONALD D, WICHITA
 LINSBAY, MICHAEL A, KANSAS CITY
 LIPSEY, JAMES H, SHAWNEE MISSION
 LITTLE, L GILBERT, WICHITA
 LIU, CHIEN, KANSAS CITY
 LIUJULUSCHAN, RIT, PARSONS
 LIVINGSTON, CHARLES E, SALINA
 LLOYD, HARVEY L, KANSAS CITY
 LLOYD, JAMES W, CONCORDIA
 LOCKHART, JOSEPH G, WICHITA
 LOEFFLER, JAMES A, WICHITA
 LOEWEN, HENRY H, WICHITA
 LOEWEN, PETER S, HILLSBORO
 LOEWEN, WILLIAM C, WICHITA
 LOFGREEN, VICTOR J, OTTAWA
 LOGAN, GEOFFREY G, WICHITA
 LOGANBILL, VAROEN J, MOUNT RIDGE
 LOHMEYER, KENNETH L, EMPORIA
 LONEY, JOHN M, BELoit
 LONG, EDWARD E, HUMBOLDT
 LONG, JOHN W, TOPEKA
 LONG, LLOYD O, GOODLAND
 LONG, ROBERT C, NORTON
 LONGWOOD, ORLIN W, TUCSON, AZ
 *LORCH, VICHEN, WICHITA
 LOTITO, CARLOS A, KANSAS CITY
 LOVELAND, G CHARLES, LAWRENCE
 LOVETT, PAUL A, WICHITA
 LOW, HAROLD L, WICHITA
 LOW, JOSEPH H, SUN CITY, AZ
 LOWE, DEWITT S, QUARTER, AZ
 LOWE, STANLEY W, MANHATTAN
 LOWMAN, JAMES T, KANSAS CITY
 LOWRY, RAY F, EL DORADO
 LUEOTKE, WALTER E, EMPORIA
 LUEKEN, LUEKE B, WICHITA
 LUELLEN, THOMAS J, WICHITA
 LUKENS, DAVID, HUTCHINSON
 LUKERT, BARBARA P, KANSAS CITY
 LULO, ANTONIO R, SHAWNEE MISSION
 LUMB, RAYMOND C, TOPEKA
 LUNGSTRUM, JACK E, SALINA
 LUZZATI, ENZO F, WICHITA
 LYNCH, JOHN A, TOPEKA
 LYNCH, SEAN R, KANSAS CITY
 LYONS, DAVE J, PITTSBURG
 LYONS JR, FRANK C, MANHATTAN

M

MAC KILLOP JR, DANIEL, WINFIELD
 MACARTHUR, RICHARD IAN, KANSAS CITY
 MACE, RONALD O, JUNCTION CITY
 MACY, NORMAN E, SALINA
 MACY, TED L, SALINA
 MAODEN, WILLIAM J, LINCOLN
 MADISON, WILLARD A, NORTONVILLE
 MADISON JR, WARO N, WICHITA
 MAOSEN, GLENN L, LAWRENCE
 MAGIDSON, ELLIOT ARTHUR, WICHITA
 *MAGILL, ALFRED MORTON, TOPEKA
 MAKLAD, M NABIL, KANSAS CITY
 MALIK, MUMTAZ ILAHI, GREAT BEND

* Probationary members.

MALLORY, JOHN A, SHAWNEE MISSION
 MALONE, EUGENE M, HALSTEAD
 MANAHAN, G EUGENE, LAWRENCE
 MANI, MANI M, KANSAS CITY
 MANLEY, JOSEPH W, SHAWNEE MISSION
 MANNING, ROBERT T, WICHITA
 MANSFIELD, CARL M, KANSAS CITY
 MANSOUR, BADIE S, WICHITA
 MANTZ, FRANK A, SHAWNEE MISSION
 MARCHBANKS, DONALD L, SALINA
 MARSH, CONNIE M, HALSTEAD
 *MARSH, GENE E, HALSTEAD
 MARSH, HENRY O, WICHITA
 MARSHALL, B M, TOPEKA
 MARSHALL, GEORGE O, COLBY
 MARSHALL, GEORGE W, SALINA
 MARSHALL, RONALD L, MANHATTAN
 MARTIN, DANIEL C, MANHATTAN
 MARTIN, EARL A, PARSONS
 MARTIN, NORMAN L, KANSAS CITY
 MARTIN, OLIVER L, SALINA
 MARTIN, WILLIAM D, TOPEKA
 MARTIN JR, ALBERT E, COFFEYVILLE
 MARTIN JR, GLEN E, WICHITA
 MARTIN, NORMAN G, KANSAS CITY
 MARYMONT JR, JESSE H, WICHITA
 MASER, GEORGE R, SHAWNEE MISSION
 MASTERS, FRANCIS W, KANSAS CITY
 MASTERSON, BYRON J, KANSAS CITY
 MASTERSON, MELVIN LERDY, TROY
 MASTIO JR, GEORGE J, WICHITA
 MATASSARIN, BENJAMIN W, WICHITA
 MATASSARIN, FREDERICK W, WICHITA
 MATHEWS, ROBERT MAJOR, SHAWNEE MISSION
 MATHEWSON, HUGH S, KANSAS CITY
 MATHEIS, JERRY L, SALINA
 MATTHEW, WILLIAM L, OLATHE
 MATTECK, IRVIN H, HAYS
 MATTIDLO, LEONE, KANSAS CITY
 MAU, WALTER, TOPEKA
 MAUCK, HAROLD C, STOCKTON
 MAWDSLEY, MICHAEL W, WICHITA
 MAXFIELD, RUSSELL J, GARDEN CITY
 MAXWELL, GORDON E, SALINA
 MAXWELL, ROBERT A, SHAWNEE MISSION
 MAY, KENNETH L, BONNER SPRINGS
 MC CLINTICK, MICHAEL D, KANSAS CITY, MO
 MC NICKLE, GEORGE ANDREW, ASHLAND
 MCALLASTER, WENDALE E, GREAT BEND
 MCBRIDE, ANN, WICHITA
 MCCANN, PATRICK E, FORT SCOTT
 MCCANN, WILLIAM E, OLATHE
 MCCARTER, DUANE K, TOPEKA
 MCCARTHY, ROBERT P, KANSAS CITY
 MCCAUGHEY, HUGH W, SHAWNEE MISSION
 MCCLANAHAN, WARO A, WICHITA
 MCCLELLAN, ERNEST L, WICHITA
 MCCLELLAN, JOHN W, TOPEKA
 MCCLEINTOCK, EDWARD A, TOPEKA
 MCCLOURE, JAMES A, TOPEKA
 MCCOLLUM, MARY B, LEAVENWORTH
 MCCOLLUM, WILLIAM B, LEAVENWORTH
 MCCOMAS JR, MARMADUKE O, CONCORDIA
 MCCONNELL, ARCHIE B, BURLINGTON
 MCCORMICK, EUGENE C, WELLINGTON
 MCCOY, CHARLES P, WICHITA
 MCCOY, CHARLES T, HUTCHINSON
 MCCOY, RONALD, OODGE CITY
 MCCRAE, SPENCER C, SALINA
 MCCREIGHT, EUGENE J, LIBERAL
 MCCULLOUGH, ROBERT C, GOODLAND
 MCEACHEN, WILLIAM H, SHAWNEE MISSION
 MCELHINNEY, CHARLES F, OODGE CITY
 MCELROY, ROBERT T, TOPEKA
 MCELROY, WILBUR J, ADDIS ABABA, ET
 MCGOVERN, JAMES L, WELLINGTON
 MCGUIRE, WILLIAM F, WICHITA
 MCGURK, THOMAS E, SHAWNEE MISSION
 MCILVAIN, GUY B, CLAY CENTER
 MCKEE, OICK B, PITTSBURG
 MCKEE, LEO F, COTTONWOOD FALS
 MCKEE, RICHARD S, LEAVENWORTH
 MCKENNA, MICHAEL J, FORT SCOTT
 MCKENZIE, STEVE LEWIS, CHERRYVALE
 MCKERHACHER, ROBERT O, DERBY
 MCKIM, W LYNN, KINSLEY
 MCKNIGHT, DAVID E, MANHATTAN
 MCKNIGHT, ELLIS B, ALMA
 MCCLAIN, KENNETH, RANSON
 MCMAHON, MERRI M, WICHITA
 McMULLEN, JOSEPH E, HUTCHINSON
 MCNEIL, ELBERT O, MANHATTAN
 MCVAY, R BRUCE, CLAY CENTER
 MCWHETER, LOTTIE B, SHAWNEE MISSION
 MEADOWS, DONALD C, WICHITA
 MEHUST, WINSTON K, KANSAS CITY
 MEDEARIS SR, DONALD N, KANSAS CITY
 MEDINA, ANIBAL, HAYS
 MEE, ADRIAN W, OLATHE
 MEEK, GEORGE C, ARKANSAS CITY
 MEEK, PALMER F, MANHATTAN
 MEEK JR, JOSEPH C, KANSAS CITY
 MEEKER II, BRUCE P, WICHITA
 MEGINOW, ALAN O, TOPEKA
 MEHAFFY, ORVILLE A, BAXTER SPRINGS
 MEHRA, PROMILLA, WICHITA
 MEIDINGER, RAY, HIAWATHA
 MEIDINGER, RICHARD, TOPEKA
 *MELEAN, JAIME, WICHITA
 MELENORES, JUANITO M, SHAWNEE MISSION

MELHORN, J MARK, KANSAS CITY
 MELIA JR, B JAMES, SHAWNEE MISSION
 *MELVIN, DAVID B, WICHITA
 MENAKER, JEROME S, WICHITA
 MENDIONES, L MARLENE, WICHITA
 MENDIONES, RUPERTO O, WICHITA
 MENEHAN, H JAMES, WICHITA
 MENEZ, CESAR V, SHAWNEE MISSION
 MENKING, F W MANFRED, WICHITA
 MENNINGER, KARL A, TOPEKA
 MENNINGER, ROBERT G, TOPEKA
 MENNINGER, ROY W, TOPEKA
 MENNINGER, W WALTER, TOPEKA
 MERCADER, MARIO S, WICHITA
 MEREDITH, W TOM, WICHITA
 MERKEL, EARL D, RUSSELL
 MERRITT, JOE P, WICHITA
 MERRITT, W HENRY, LEAVENWORTH
 MERSHON, JAMES C, WICHITA
 MESINA, ROLAND R, KANSAS CITY
 MEULBROEK, HARVEY J, WICHITA
 MEYER, WARREN E, WICHITA
 MEYERS, STEPHEN, GARDEN CITY
 MICHELBAUGH, ALBERT P, WICHITA
 MIGUELINO, OLIVER M, EMPORIA
 MIN, ALEXANDER, CHANUTE
 *MILFELD, DOUGLAS J, WICHITA
 MILLER, ABRAHAM H, MANHATTAN
 MILLER, CHARLES H, PARSONS
 MILLER, CLYDE W, WICHITA
 MILLER, DEAN M, PARSONS
 MILLER, DON E, WICHITA
 MILLER, EARL E, PITTSBURG
 MILLER, ELDON V, SALINA
 MILLER, FRANKLIN R, WINFIELD
 MILLER, FREEMAN LANCE, SHAWNEE MISSION
 MILLER, HERBERT C, NORTON, CT
 MILLER, LAWRENCE H, WICHITA
 MILLER, MONTE B, RIALTO, CA
 *MILLER, PHILIP A, WICHITA
 MILLER, ROBERT E, GARDEN CITY
 MILLIGAN, DONALD B, OLATHE
 MILLS, CHARLES O, WICHITA
 MILLS, GEORGE DUNTON, WICHITA
 MILLS JR, PHILIP E, TOPEKA
 MIMOSO, JOSE J, OODGE CITY
 MINER JR, PHILIP B, KANSAS CITY
 MINNICK, CHARLES V, JUNCTION CITY
 MIRZA, MEDO, WICHITA
 MITCHELL, ALEX C, LAWRENCE
 MITCHELL, JOHN C, SALINA
 MITTLEMAN, FREDERICK S, TOPEKA
 MITTS, ERNEST W, BONNER SPRINGS
 MOORELL, CAROL A, LAWRENCE
 MOOLIN, HERBERT C, TOPEKA
 MOELLER, DONALD O, KANSAS CITY
 MOFFAT, ROBERT E, KANSAS CITY
 MOHLER, JACK M, ABILENE
 MONTGOMERY, LLOYD DAN, HALSTEAD
 MONTGOMERY, THOMAS ALLEN, SABETHA
 MONTGOMERYSHORT, RUTH G, HALSTEAD
 MOORE, DENNIS F, WICHITA
 MOORE, HUGH C, TOPEKA
 MOORE, JAMES E, CONCORDIA
 MOORE, ROBERT, HOISINGTON
 MOORE, ROBERT F, CANEY
 MOORE, WAYNE V, KANSAS CITY
 MOORHEAD JR, F ALLEN, NEODESHA
 MORALES, AMALIA O, OSAWATOMIE
 MORALES, OTTO E, OSAWATOMIE
 MORANTZ, ROBERT A, KANSAS CITY
 MORCOS, ABDELMAK E, SHAWNEE MISSION
 MORFFI, RAUL R, KANSAS CITY
 MORGAN, OICK A, WICHITA
 MORGAN, JAMES I, WICHITA
 MORGAN, JOHN L, EMPORIA
 MORGAN, NOVA L, HAYSVILLE
 MORGAN II, DAVID LLOYD, OLATHE
 MORGAN III, LOUIS S, WICHITA
 MORONEY, JEAN M, SHAWNEE MISSION
 MORRIS, MERLE O, TOPEKA
 MORRISON, IRA R, ATCHISON
 MORRISON, RICHARD A, KANSAS CITY
 MORRISON, RICHARD L, ELLINWOOD
 MORROW, THOMAS F, WICHITA
 MORROW JR, J TARLTON, TOPEKA
 MORTON, JOHN E, HALSTEAD
 MOSELEY, JACK E, WICHITA
 MOSER, ERNEST C, HOLTON
 MOSER, M ROSS, HOLTON
 MOSER, ROY H, HOLTON
 MOSIER, STANLEY JAY, WICHITA
 MOSIER, STEVEN J, MANHATTAN
 *MOTKALLEN, MOHAMMED, WICHITA
 MOU, BIN, BAXTER SPRINGS
 MOWERY, WILLIAM E, SALINA
 MOWRY, GERALD L, MANHATTAN
 MOY, JAMES T, WICHITA
 MOYER, HERMAN J, DERBY
 MOYER, JOHN O, TOPEKA
 MUEHLBERGER, JAMES J, SHAWNEE MISSION
 MUELLER, ARNOLD V, TOPEKA
 MUELLER, J KENT, SHAWNEE MISSION
 MUELLER, VERNETTE A, WICHITA
 MULL, JOHN C, HUTCHINSON
 MULLEN JR, CLIFFORD J, KANSAS CITY
 MULLEN SR, CLIFFORD J, KANSAS CITY
 MULLER, SAMUEL B, PITTSBURG
 MULLINIX, JANICE W, WICHITA
 MURFIT, MALCOLM C, LINDSBORG

MURPHY, BARRY L. WICHITA
MURPHY, DUANE A. WICHITA
MURPHY, PAUL M. WICHITA
*MURPHY, THOMAS MEAD, TOPEKA
*MURRAY, KENT B. WICHITA
MYERS, JO ANN, TOPEKA
MYERS, ROBERT W. NEWTON
MYERS, W EUGENE, IOLA
MYERS JR, EARL B. INDEPENDENCE
MYRICK, MICKEY, HAYS

N

NABOURS, RICHARD O. TOPEKA
NACHTIGALL, ANDREW, NEWTON
NAGESH, KAVI G. LEAVENWORTH
NAIK, GOPAL V. PAOLA
NALDOZA JR, FAUSTINO M. WELLINGTON
*NANCE, JOEL, TOPEKA
NARCISO, VICENTE O. ABILENE
NASH, NEWMAN CURTIS, SCOTTS DALE, AZ
NASH, ROBERT A. SHAWNEE MISSION
NASON, HERBERT M. KANSAS CITY
NAUER, PAULA LOU, SHAWNEE MISSION
NEEL, WILBUR B. HUTCHINSON
NEFF, JAMES R. KANSAS CITY
NEIBURGER, JAMES B. SHAWNEE MISSION
NEIGHBOR, ERNEST G. KANSAS CITY
NEIGHBOR, ERNEST H. PITTSBURG
NEIGHBOR, GAYLORD R. KANSAS CITY
NEIGHBOR, RALPH M. EMPORIA
NEIL, ROY NEWTON, HAYS
NEIS, HARRY B. OSAGE REACH, MO
NELSON, BRYAN C. SHAWNEE MISSION
NELSON, GERALD O. WICHITA
NELSON, JAMES N. TOPEKA
NELSON, PAUL L. CONCORDIA
NELSON, RICHARD O. LAWRENCE
NELSON, RUSSELL ALAN, WICHITA
NELSON, T EUGENE, FORT SCOTT
NELSON, WILLIAM PAUL, KANSAS CITY
NELSON JR, GUST H. WICHITA
NEMMERS, DAVIO J. WINFIELD
NESMITH, LESLIE W. WICHITA
NEUENSCHWANDER, JOHN, HOXIE
NEUENSCHWANDER, JOHN RAND, HOXIE
NEUER, FREDERICK S. EMPORIA
NEUSCHAFER, DARRYL R. HUTCHINSON
NEVINS, RICHARD L. LIBERAL
NEVITT, J RUSSELL, MORAN
NEWBY, JAMES P. WICHITA
NEWCOMB, WARD M. HAYS
NEWKIRK, DARRYL O. KANSAS CITY
NEWMAN, CLIFFORD B. PITTSBURG
NEWSOM, F CARTER, WICHITA
NEWTON, CHARLES R. PORTLAND, OR
NICE, G WILLIAM, TOPEKA
NICKELL, WAITSTILL B. SALINA
NICKELL, WENDELL K. SALINA
NIEBLES, ANGEL, WELLINGTON
NIEDEER, W CURTIS, GREAT BEND
NIEMAN, JOHN L. SHAWNEE MISSION
NIENSTEDT, JOHN F. SUN CITY, AZ
NIXON, RICHARD R. CONCORDIA
NIXON, WILLIAM A. WICHITA
NOME, PHILIP C. KANSAS CITY
NORRIS, CHARLEY W. KANSAS CITY
NORRIS, ROBERT P. WICHITA
NORTH, DORIS G. WICHITA
NORTH, VICTOR, WICHITA
NORTON, ROBERT K. WICHITA
NOSTI, JUAN C. SHAWNEE MISSION
NOTHNAGEL, ARNOLD F. KANSAS CITY
NOVOTNY, RETER C. TOPEKA
NOWLIN, NANCY S. WICHITA
NULL, WILLIAM G. SALINA
NUNEMAKER, MARION E. HUTCHINSON
NUNEZ, JULIAN, KANSAS CITY
NYBERG, FREDRIK F. WICHITA
NYE, C ERIK, SHAWNEE MISSION
NYSTROM, CURTIS A. TOPEKA

O

O DONNELL, HAROLD F. ELLSWORTH
O DONNELL JR, LEONARD A. WICHITA
O DONNELL SR, LEONARD A. WICHITA
O'BOYNIK II, PAUL LEONARD, KANSAS CITY
O'BRYAN, JAMES J. SHAWNEE MISSION
O'CONNELL, FRANK A. SHAWNEE MISSION
O'DELL, MICHAEL L. SHAWNEE MISSION
O'DONNELL, HARRY E. JUNCTION CITY
O'DONNELL, RICHARD H. CLAY CENTER
O'GRADY, JOSEPH A. HALSTEAD
O'NEIL, ROBERT H. TOPEKA
O'SHEA, JAMES G. JETMORE
O'TOOLE, JAMES K. NEWTON
OBANDO, GUILLERMO, SALINA
OBOURN, ROBERT L. TOPEKA
OCHSNER, BRUCE B. WICHITA
OENHEIMER, BURTRAM J. WICHITA
OOGERS, ROONEY K. PITTSBURG
*OOLIO, PERLITA, WICHITA
OELSCHLAGER, RONALD O. LAWRENCE
OHMAN, RICHARD J. ODOGE CITY
OHMART, RICHARD V. OAKLEY
OKTAWIEC, DANUTA, SHAWNEE MISSION
OLO, JERRY L. ARKANSAS CITY
OLOFIELDO, RAY W. KANSAS CITY
*OLIVER JR, JAMES H. OERBY
OLNEY, ROBERT O. MANHATTAN

* Probationary members.

OLSEN, PHILLIP S. EL DORADO
OLSON, CARL E. LAWRENCE
OLSON, CLITUS W. GOODLAND
OLSON, ERWIN T. NEWTON
OLTMAN, THEODORE V. RILEY
OPENSHAW, CALVIN R. HUTCHINSON
ORCHARO, RICHARD A. LAWRENCE
*ORGAN, ALAN ELLIOTT, TOPEKA
OSBORN, ROBERT M. INDEPENDENCE
OSBORNE, CONRAD C. WICHITA
OSGOOD, GEORGE M. SHAWNEE MISSION
OSIO, ANTONIO L. WICHITA
OSOBA, WILLIAM G. WICHITA
OTHMER, ECKEHARD, KANSAS CITY
*OUANO JR, BIBIANO B. MC PHERSON
OVERHOLSER, NORMAN H. EL DORADO
OWEN, GARRY D. LAWRENCE
OWEN, LARUE W. WICHITA
OWEN, PERE A. WICHITA
OXLER JR, JOHN EDWARD, KANSAS CITY

P

PACE, JOHN O. PARSONS
PAGE, WILLIAM L. WICHITA
PAGE, O VALE, PLAINVILLE
PAGE, RUTH G. WICHITA
PAINE, GEORGE E. HUTCHINSON
*PALMBERG, KENT E. TOPEKA
PALMER, DAVIO L. WICHITA
PALMER, GERALD K. SALINA
PALMER, MARVIN M. LEAVENWORTH
PALMER JR, H C. LIBERAL
PANICHABHONGSE, SAMBUNOH, RUSSELL
*PAPP, ROBERT, TOPEKA
PARANJOTHI, SUBRAMONIAM P. PARSONS
PARDO, LILLIAN G. KANSAS CITY
PARDO, MANUEL P. KANSAS CITY
PAREKH, AJITKUMAR M. KANS CITY
PARK, CHAN H. KANSAS CITY
PARKER, HAROLD L. WICHITA
PARKER, ROBERT W. LEAVENWORTH
PARKER, WAYNE G. R. EMPORIA
*PARKS, GILBERT R. TOPEKA
PARMAN, ROBERT O. TOPEKA
PARRA, MIGUEL O. KANSAS CITY
PARSI, MANUTICHEHR K. PITTSBURG
*PARULKAR, DEEPAK S. TOPEKA
PASCHINO, ANTONIO R. KANSAS CITY
PASIMIO, ROGER S. COLUMBUS
PASTOR, VICTOR HUGO, EMPORIA
PATAK, RAMACHANDRA V. KANSAS CITY
PATEL, VINOD, TOPEKA
PATINO, EDGAR, TOPEKA
*PATRICK, FRED EDWARD, TOPEKA
*PATTERSON, BRUCE W. WICHITA
PATTERSON, JOHN R. SHAWNEE MISSION
PATTERSON, MICHAEL S. GAROEN CITY
PAULS, DANIEL N. PARSONS
*PAY, NORMAN T. WICHITA
PAYNE, J RALPH, KANSAS CITY, MO
PAYNE, ROBERT R. TOPEKA
PAZELL, JOHN A. KANSAS CITY
PEARCE, EUGENE W. J. SHAWNEE MISSION
PEARCE, LUNETTA M. SHAWNEE MISSION
PEASE, GARY L. HUTCHINSON
PECANA, MANUEL C. KANSAS CITY
PEDERSON, ARNOLD M. PLAINVILLE
PEORAZA, HERNANDO V. NEWTON
PEES, GERALD B. IOLA
PEES JR, GERALD BOYD, LAWRENCE
PEFFLY, ELMER D. CHETOPA
PENCKE, CHARLES O. WICHITA
*PENKA, WAYNE E. TOPEKA
PENN, GEORGE M. TOPEKA
PENNINGTON, KATHERINE, WICHITA
PENTECOST, RICHARD L. SHAWNEE MISSION
PEREIRA, WILLY G. ARKANSAS CITY
PERIOD, DOMINADOR T. ELKHART
PERKINS, JACK L. HUTCHINSON
PERKINS, WILLIAM GENE, KANSAS CITY
PERRY JR, LAWRENCE L. KANSAS CITY
PETELIN, JOSEPH B. KANSAS CITY
*PETERIE, JERRY R. WICHITA
PETERS, DALE W. WICHITA
PETERS, GLENN R. KANSAS CITY
PETERSEN, A GENE, SHAWNEE MISSION
PETERSEN, GERALD O. SHAWNEE MISSION
PETERSON, DEAN L. TOPEKA
PETERSON, JACK T. MANHATTAN
PETERSON, ROBERT J. TOPEKA
PETERSON, VERNON J. TOPEKA
PETERSON JR, EVAN A. WATHENA
PETIT, CARL ALFONSO, SHAWNEE MISSION
PETRIE, SAMUEL C. SHAWNEE MISSION
PETRIK, EDWIN L. TOPEKA
PETTEGREW, PAULINE K. SHAWNEE MISSION
*PETTERSON, CECIL E. SYRACUSE
*PETTERSON, DENNIS CRAIG, TOPEKA
PETTERSON, O'RUTH S. WICHITA
PETTITJOHN, WALTER J. RUSSELL
PFUETZE, BRUCE L. SHAWNEE MISSION
PFUETZE, KARL O. SHAWNEE MISSION
PFUETZE, ROBERT E. TOPEKA
PHILGREEN, DONALD E. OTTAWA
PHILLIPS, STEPHEN B. MANHATTAN
PHILLIPS, WARREN G. SHAWNEE MISSION
PHIPPS, JACK G. WICHITA
PIERCE, CHARLES F. TOPEKA
PIERCE, DONALD R. TOPEKA
PIERCE, GEORGE E. KANSAS CITY

PIERRON, GEORGE J. OLATHE
PIERSON, W WEIR, MCPHERSON
PILCHARD, WILLIAM A. SHAWNEE MISSION
PINCOMB, ARTHUR L. OLATHE
PINSKER, JACOB A. WICHITA
PISCHKE, FRANK J. KANSAS CITY
PITMAN, WILL O. PRATT
PITTS, RONALD L. SHAWNEE MISSION
PLOWMAN, CARL W. JEWELL
POGSON, GEORGE W. PITTSBURG
POKORNY, CHARLES, HALSTEAD
POL, P ALBERT, KANSAS CITY
POLING, TERRY L. WICHITA
POLLACK, SIMON, WICHITA
POLLANO OO, STEPHEN M. WICHITA
POLLOCK, ANTHONY G A. WICHITA
POLLY, RICHARD E. TOPEKA
POLSON, ROBERT C. GREAT BEND
POOLE, BERNARD T. WICHITA
PORTER, DAVIO M. KANSAS CITY
PORTER, GARRY L. WICHITA
PORTER, ROBERT O. TOPEKA
POTTER, ROBERT L. KANSAS CITY
POWELL, CAROL W. SHAWNEE MISSION
POWELL, KENNETH A. SHAWNEE MISSION
POWELL, WILLIAM R. TOPEKA
POWELL II, BENSON M. TOPEKA
POWERS, G ROBERT, KANSAS CITY
POWERS, HAROLD W. SUN CITY, AZ
POWERS, K DEAN, WICHITA
PRAEGER, MARK A. LAWRENCE
PRAKALAPAKORN, DARANEE, NESS CITY
PRAKALAPAKORN, YANYONG, NESS CITY
PREHEIM, OELBERT V. NEWTON
PREMSINGH, NALINI G. KANSAS CITY
PRENTISS, HAROLD, HALSTEAD
PRESTON, DAVIO F. KANSAS CITY
PRESTON, RALPH R. TOPEKA
PRESTON, RICHARD, GREAT BEND
PRETZ, JAMES B. KANSAS CITY
PRICE, JAMES GORDON, KANSAS CITY
PRICE, VAUGHAN C. MCPHERSON
PRICE JR, LAURANCE W. LAWRENCE
PRIETO, JORGE N. GARONER
PRIETO, LUIS E. WICHITA
PROCHAZKA, OTTO F. LIBERAL
PROCTOR, ROBERT W. EL DORADO
PROKOP, BRADFORD S. TOPEKA
PRONKO, MICHAEL J. SHAWNEE MISSION
PROUD, G ONEIL, KANSAS CITY
*PRUITT, JOHN C. WICHITA
PUGH, DAVIO M. KANSAS CITY
PULLMAN, NORMAN K. WICHITA
PURINTON, LEW W. WICHITA
PUTHENPURACKAL, GEORGE, WINFIELD
PUTNAM, LYLE B. WICHITA
PYLE, LUCIEN R. TOPEKA

Q

QAMAR, YUSUF, NEWTON
QUACKENBUSH, ROBERT P. ST JOHN
QUATSON, EMMELINE R. KANSAS CITY
QUENZER, RONALD W. PRATT
QUINN, CHARLES E. KANSAS CITY
QUINOINES, ELADIO A. DSAVATOMIE

R

RABE, MELVIN A. LEAVENWORTH
RACELA JR, ANTONIO S. SHAWNEE MISSION
RAOON, SANFORD B. SHAWNEE MISSION
RAOQVANOY, RAOMILA, NEWTON
RAHBAR, AL A. WICHITA
RAHMAN, HAFIZ M A. ARCADIA, FL
RAINBOW, KATHRYN A. TOPEKA
RAJEWSKI, RICHARD L. HAYS
RAMIREZ, AUGUSTO H. PITTSBURG
RAMIREZ, IRENE, PITTSBURG
RAMSEY, BARTLETT W. TOPEKA
RANDALL, GEORGE R. WICHITA
RANOLDS, MICHAEL J. WICHITA
RANSOELL, EDGAR C. TOPEKA
RANSOM, JAMES H. TOPEKA
RASSA, REZA P. SALINA
RATE, ROBERT G. HALSTEAD
RATHBUN, EDWIN O. LIBERAL
RAUSA JR, FRANCISCO C. WICHITA
RAWCLIFFE JR, ROBERT A. WICHITA
RAZEK, ZACK A. WICHITA
READ, WILLIAM T. COFFEYVILLE
REALS, WILLIAM J. WICHITA
REAZIN, WALTER L. WICHITA
RECKLING, FREDERICK W. KANSAS CITY
REDDY, B N. HILL CITY
REDDY, EASHWER K. KANSAS CITY
REDDY, NARAYAN C. SHAWNEE MISSION
REDDY, P JAGANNADHA, HILL CITY
REDDY, SATTI S. ODOGE CITY
REDFORD, JOHN W B. KANSAS CITY
REECE, A THOMEN, GARONER
REECE, ADOLBERT S. GARONER
REECE, CAROL A. GARONER
REECE, RICHARD J. SALINA
REED, A J. WICHITA
REED, O CRAMER, WICHITA
REED, DAVIO O. WICHITA
REED, JAMES S. APO MIAMI, FL
REED, RALPH R. LAWRENCE
REESE, JACK O. LIBERAL
REESE, JOHN L. LAWRENCE
REEVES, BRADFORD F. WICHITA

REEVES, CHARLES S, FORT SCOTT
 REGIER, HENRY L, KANSAS CITY
 REGIER, LADONNA M, COLBY
 REIMER, DONALD R, TOPEKA
 REINHART-WULF, TAISSIA L, GARDEN PLAIN
 REINKING, VICTOR E, TOPEKA
 REITZ, LELAND C, MANHATTAN
 REITZ, ROGER P, MANHATTAN
 REIVICH, RONALD S, SHAWNEE MISSION
 RELIHAN, DONALD A, WICHITA
 RELIHAN, FRANCIS H, SMITH CENTER
 REMPEL, JOHN H, WICHITA
 RENNON, HUMBERTO M, TOPEKA
 *RENNBOHM, ROBERT M, WICHITA
 REPLEGLE, CHARLES B, GREAT BEND
 RETTENMAIER, ALBERT J, KANSAS CITY
 REYES JR, FRANCISCO A, OTTAWA
 REYMOND, RALPH O, TOPEKA
 REYNOLDS, JEFFREY C, HAYS
 REYNOLDS, LLOYD W, HAYS
 RHODAS, JAMES P, WICHITA
 RHODES, CURTIS H, WICHITA
 RHODES, IVAN E, WICHITA
 RHODES, JAMES B, KANSAS CITY
 RHODES, LOWELL M, WICHITA
 RHODES, MARTIN L, KANSAS CITY
 RICE JR, FREDERICK A, KANSAS CITY
 RICH, ELDON S, NEWTON
 RICHARDS, DENNIS O, CLAY CENTER
 RICHARDS, DON F, SHAWNEE MISSION
 RICHARDSON, J M, TOPEKA
 RICHARDSON, JAY L, ARKANSAS CITY
 RICHARDSON, STEWART F, WICHITA
 RICK JR, GREGORY GP, KANSAS CITY
 RIDER, JAMES W, ATCHISON
 RIEDEL, ROBERT H, TOPEKA
 RIEGER, ERNEST H, WICHITA
 RIEKE, FRANK A, SHAWNEE MISSION
 RIGLER, WILSON F, ARMA
 RILEY, RAY B, KANSAS CITY
 RIORDAN, HUGH O, WICHITA
 RISING, JESSE O, KANSAS CITY
 RIZZA, ROBERT G, HALSTEAD
 ROACH, NEIL E, HALSTEAD
 ROBERTS, DANIEL K, WICHITA
 ROBERTS, LOUIS S, WICHITA
 ROBERTS, RICHARD S, LAWRENCE
 ROBERTS, WARREN E, TOPEKA
 ROBERTSON, JOSEPH K, WICHITA
 ROBINSON, DAVID B, TOPEKA
 ROBINSON, DAVID W, KANSAS CITY
 ROBINSON, EDGAR L, INDEPENDENCE
 ROBINSON, DONALD O, WICHITA
 ROBINSON, JOHN O, KANSAS CITY
 ROBINSON, JOHN E, WICHITA
 ROBINSON, RALPH G, KANSAS CITY
 ROBINSON, ROBERT H, WICHITA
 *ROBINSON, WILLIAM A, WICHITA
 ROBINSON, JAMES T, KANSAS CITY
 *ROBL, DAVID A, WICHITA
 ROCERETO, PAUL V, TOPEKA
 ROCHANAYON, PIRA, ELLIS
 RODERICK, JAMES E, SALINA
 RODRIGUEZ, RAUL G, KANSAS CITY
 RODRIGUEZ-TOCKER, LILIA, WICHITA
 ROEDER, ROBERT E, TOPEKA
 ROJAN, CHAVALLIT, PARSONS
 ROLLINS, DOUGLAS E, KANSAS CITY, MO
 ROMALIS, BRIAN E, WICHITA
 ROWEISER, REX S, SALINA
 ROMONDO, STEVEN A, OLATHE
 ROOK, LEE E, KANSAS CITY
 RORABAUGH, DONALD C, ABILENE
 ROSE, DONALD L, BELLA VISTA, AR
 ROSE, GRAHAM C, MANHATTAN
 ROSE, SHELBY O, WICHITA
 *ROSEN, DAVID, WICHITA
 ROSENBERG, STANTON L, SHAWNEE MISSION
 ROSENBERG, THOMAS F, WICHITA
 ROSENTHAL, RICHARD, SHAWNEE MISSION
 ROSENTHAL, STANTON J, KANSAS CITY
 ROSS, DAVID K, ARKANSAS CITY
 *ROSS, DENNIS LEE, WICHITA
 ROSS, JACK L, TOPEKA
 ROSSITTO, ANTHONY F, SAN FRANCISCO, CA
 ROTERT, LARRY, TOPEKA
 ROTH, ALAN E, KANSAS CITY
 ROTHSTEIN, TERRY B, PARSONS
 ROVINSKI, HELEN T, TOPEKA
 ROWLETT, JACK G, PAOLA
 ROY, WILLIAM R, TOPEKA
 RUBIN, HERBERT M, SHAWNEE MISSION
 RUBIN JR, BEN, KANSAS CITY
 RUBLE JR, JAMES L, OVERBROOK
 RUCKER, CLEMENS, TOPEKA
 RUEB, ANDREW E, SALINA
 RUHLIN, JAMES L, OLATHE
 RUIZ, CARLOS M, GREAT BEND
 RUOLO, MERVIN J, SHAWNEE MISSION
 RUNNELS, JOHN B, TOPEKA
 RUPP, RICHARD J, TOPEKA
 RUSSELL, PHILIP W, WICHITA
 RUTH, WILLIAM E, KANSAS CITY
 RUZICKA, LAWRENCE J, CONCORDIA
 RYAN, EDWARD J, EMPORIA
 RYAN, MICHAEL J, KANSAS CITY
 RYAN, THOMAS F, MANHATTAN
 RYAN, W SCOTT, EMPORIA

* Probationary members.

S
 SABIN JR, GEORGE M, WICHITA
 SADIO, SULEMAN, WICHITA
 SAEED, MOHAMMAD A, WICHITA
 SAFFO, KARL S, SHAWNEE MISSION
 SALGADO, CARLOS R, WICHITA
 SAMUEL, CHANDY C, WINFIELD
 SANCHEZ, ROGELIO, TOPEKA
 SANDBERG, CHRIS B, EL DORADO
 SANDERS, J ALAN, LAWRENCE
 SANDHU, PAUL S, COFFEYVILLE
 SANTOSCO, GILBERT S, WICHITA
 SARGENT, JOSEPH O, TOPEKA
 SATHYANARAYANA, SARASWATHI, SHAWNEE MISSION
 SAUL, F WILLIAM, EMPORIA
 SAVIN, VIRGINIA J, KANSAS CITY
 SAWKAR, LAXMIKAS A, SHAWNEE MISSION
 SAYLER, JEROME, GREAT BEND
 SAYLOR, EDWARD H, TOPEKA
 SAYLOR, LESLIE L, TOPEKA
 SAYLOR, MARK, TOPEKA
 SAYLOR, STEPHEN, OTTAWA
 SCALES, WILLIAM M, BLUE EYE, MO
 SCAMMAN, W MIKE, TOPEKA
 SCANLAN, TIMOTHY M, WICHITA
 SCANLON JR, JAMES H, HADAM, CT
 SCHAEFER, JOSEPH PETER, SHAWNEE MISSION
 SCHAEFFER, CLARENCE K, SANTA CRUZ, CA
 SCHAUM, STEPHEN P, KANSAS CITY
 SCHELLINGER, RICHARD P, EMPORIA
 SCHERER, ALFRED L, ST JOHN
 SCHILTZ, FRANCES, WICHITA
 SCHIMKE, R NEIL, KANSAS CITY
 SCHLACHTER, ERNEST R, WICHITA
 SCHLEMMER, ROGER B, PITTSBURG
 SCHLICHER, JOHN E, WICHITA
 SCHLOERB, PAUL R, ROCHESTER, NY
 SCHLOESSER, HARVEY L, TOPEKA
 *SCHLOESSER, PATRICIA T, TOPEKA
 SCHLOTTERBACK, WILLIAM E, MANKATO
 SCHLUETER, JOHN J, WICHITA
 SCHMAUS, LYLE F, IDA
 SCHMIOT, HERBERT R, NEWTON
 SCHMIOT, RAMON WARNER, SALINA
 *SCHNELLE, JOACHIM, WICHITA
 SCHNOEBEL, RENE E, KINSLEY
 SCHNOSE, GREGORY O, LAWRENCE
 SCHOPF, CLIFTON C, WICHITA
 SCHOTLAND, EDWARD S, KANSAS CITY
 SCHRAM, PETER CHARLES, TOPEKA
 SCHREFFER, ROSEMARY, KANSAS CITY
 SCHROEDER, SYDNEY O, LAWRENCE
 SCHRULL, JACK C, HUTCHINSON
 SCHUETZ, PERRY N, GREAT BEND
 SCHUKMAN, JAY STEPHEN, GREAT BEND
 SCHULTZ, JAMES E, COUNCIL GROVE
 SCHWARTING, J STEVE, ABILENE
 SCHWARTZ, EUGENE W, OODGE CITY
 SCHWARTZ, V DEAN, WICHITA
 SCHWEGLER, RAYMOND A, LAWRENCE
 SCHWEGLER, RAYMOND A, SHAWNEE MISSION
 SCHWORM, CURTIS P, KANSAS CITY
 SCOTT, ALEX, JUNCTION CITY
 SCOTT, CHESTER E, SALINA
 SCOTT, OJANE L, BELLEVILLE
 SCOTT, VINCENT L, WICHITA
 SCOTT, WILLIAM H, WICHITA
 SEAGO, CHARLOTTE L, LIBERAL
 SEAMAN, LAUREN I, OLATHE
 SEBREE, STEVEN G, SALINA
 SEELEY, JAMES C, HOLTON
 SEGERSON, JOHN A, TOPEKA
 SEHOEV, JOAN, TOPEKA
 SEITZ JR, JOSEPH E, ELLSWORTH
 SEKAVEC, GORDON B, OAKLEY
 SERERES, EDGAR P, KANSAS CITY
 SERRANO, JOAQUIN, ARCADIA, FL
 SETTLE JR, RUSSELL O, OLATHE
 SETTLE SR, RUSSELL O, TOPEKA
 SEVIER, SAMUEL M, TOPEKA
 SEXTON EXEC SEC, LETHA, MANHATTAN
 SHAD, OROTHY J, SHAWNEE MISSION
 SHAFER, PRESTON J, WICHITA
 SHAM, MIAN, LARNED
 *SHAM, MUKHTAR H, WICHITA
 SHAM, NASREEN, LARNED
 SHAM, SHARFUDDIN, HALSTEAD
 SHAW, JAMES W, WICHITA
 SHAW, JOSEPH L, TOPEKA
 SHAW, RICHARD C, WICHITA
 SHAW JR, JAMES W, HUTCHINSON
 SHEAFOR, DOUGLAS, TOPEKA
 SHEARS, ROBERT N, HUTCHINSON
 SHEFFER, KEITH O, OLATHE
 SHEIKH, MASOOD A, INDEPENDENCE
 SHELLITO, JOHN G, WICHITA
 SHELTON, STEPHEN E, TOPEKA
 SHEPARD, LEROY W, LARNED
 SHEPHERD, GLEN R, CORONA DEL MAR, CA
 SHEPPARD, ROBERT G, SMITH CENTER
 SHERMAN, ROBERT P, KANSAS CITY
 SHERWOOD JR, CLARENCE E, TOPEKA
 SHIELLOS JR, JAMES M, EL DORADO
 SHIFLET, ALBERT W, WICHITA
 SHIVEL, DAVID G, GREAT BEND
 SHOFSTALL, WILLIAM H, SHAWNEE MISSION
 SHRAOER, DOYLE A, WICHITA
 SHUSS, JOHN LOGAN, KANSAS CITY
 SIBALA, JUSTO L, PRAIRIE
 SIEGEL, ALBERT R, WICHITA

SIEMENS, RICHARD A, LYONS
 SIFERS, EARL C, KANSAS CITY
 SIFFORD, R LAWRENCE, WICHITA
 SILER, EUGENE T, HAYS
 SILLS, CHARLES T, NEWTON
 SILVERGLAT, MICHAEL J, KANSAS CITY
 SILVERS, ALVIN, KANSAS CITY
 SIMMONS, ROBERT EARLE, NEWTON
 SIMMONS, WILLIAM C, WELLSVILLE
 SIMPSON, J COLBERT, SALINA
 SIMPSON, ROBERT LIMBAUGH, OBERLIN
 SIMPSON, TOM C, STERLING
 SIMPSON, WILLIAM S, TOPEKA
 SINCLAIR, ROBERT E, MANHATTAN
 SINGER, PHILIP A, KANSAS CITY, MO
 SINGH, GIRVAR, ARKANSAS CITY
 SINNING, GARY, HIAWATHA
 SISK, PHILLIP B, TOPEKA
 SKAER, STANLEY ALLEN, EUREKA
 SKIBBA, RICHARD M, WICHITA
 SKIKNE, BARRY S, KANSAS CITY
 SLAUGHTER OIR, JERRY, TOPEKA
 SLEEPER, CAROL A, KANSAS CITY, MO
 SLEEPER, DONALD C, WICHITA
 SLOO, MILO G, SALINA
 *SLUTSKY, LAWRENCE JOEL, WICHITA
 SMITH, ALVIN L, WICHITA
 SMITH, BOYD E, SALINA
 SMITH, BRUCE G, ARKANSAS CITY
 SMITH, DALE C, SHAWNEE MISSION
 SMITH, DONALD J, SHAWNEE MISSION
 SMITH, HAROLD R, SALINA
 SMITH, JOHN D, LARNED
 SMITH, LARRY M EXEC SE, SALINA
 SMITH, LEO A, TOPEKA
 SMITH, NEWTON C, ARKANSAS CITY
 SMITH, STEPHEN D, KANSAS CITY
 SMITH, STEPHEN J, ARKANSAS CITY
 *SMITH, TIMOTHY WM, WICHITA
 SMITH JR, FLOYD L, COLBY
 SMITH JR, WILLARD J, WICHITA
 *SNARR, JACK W, TOPEKA
 SNODDELL, FIRMIN E, SHAWNEE MISSION
 SNOOK, ROBERT RUFUS, MCLOUTH
 SNOW, DONALD L, LANSING
 SNOW JR, ARTHUR O, SHAWNEE MISSION
 SNOWBARGER, MARVIN O, EMPORIA
 SNYDER, C JOHN, WINFIELD
 SNYDER, GREGG M, WICHITA
 SNYDER, HOWARD E, WINFIELD
 SNYDER, THOMAS E, MONTGOMERY, AL
 SNYDER JR, RICHARD HENRY, OLATHE
 SOELONER, JAMES OLIVER, OLATHE
 SOHLBERG JR, ROBERT, MCPHERSON
 SOLOMON, HERMAN, WICHITA
 SOLTZ, ROBERT A, WICHITA
 SOMERS, MARVIN M, WICHITA
 SONGER, HERBERT L, LINCOLN
 SOUCEK, CHARLES D, KANSAS CITY
 SPANN, RICHARD W, WICHITA
 SPAULDING, JOHN S, KANSAS CITY
 SPEARMAN, JESSE L, TOPEKA
 SPEER, FREDERIC, SHAWNEE MISSION
 SPEER, LELAND, KANSAS CITY
 SPEER, LOUIS N, OTTAWA
 SPENCER, JOHN HAROLD, FT SCOTT
 SPENCER, WILLARD C, TOPEKA
 SPENCER, WAYNE E, TOPEKA
 SPIKES, MARION E, GARDEN CITY
 *ST-PHARO, GLOOYS, WICHITA
 STAFFORD, ROBERT W, HUTCHINSON
 STANLEY, KENNETH E, WICHITA
 STANLEY, REX C, PAOLA
 STARK, JAMES R, WICHITA
 STARKY, JERALD L, RUSSELL
 STECH, JOSEPH M, ANDALE
 STECHSCHULTE, DANIEL J, KANSAS CITY
 STEEGMANN, A THEODORE, INDIANAPOLIS, IN
 STEELE, CLARENCE M, KANSAS CITY
 STEICHEN, EDWARD F, LENORA
 STEIN, JOSEPH M, TOPEKA
 STEIN, PAUL S, WICHITA
 STEIN, ROBERT B, MANHATTAN
 STEIN, ROBERT THOMAS, KANSAS CITY, MO
 STEINER, ROBERT M, SHAWNEE MISSION
 STEINKRUGER, VERLYN WILLIAM, SMITH CENTER
 STEINZIG, ALFRED S, SHAWNEE MISSION
 STEINZIG, SHERMAN M, KANSAS CITY
 STENSAAS, CARL O, HUTCHINSON
 STEPHENS, CHARLES, MINNEOLA
 STEPHENS, RONALD L, KANSAS CITY
 STEPHENSON, LUCILLE C, ST FRANCIS
 STEVENS, MILORED J, GARNETT
 STEVENS, PHILIP L, TONGANOXIE
 STEVENS, ROBERT L, GARNETT
 STEVENSON, CHARLES E, KANSAS CITY
 STEVENSON, E KENT, SHAWNEE MISSION
 STEWART, DAVID R, KANSAS CITY
 STEWART, JACK T, WICHITA
 STILLIE, G DONALD OO, KANSAS CITY, MO
 STITT, RONALD W, KANSAS CITY
 STOCK, KARL W, TOPEKA
 STOCKWELL, MORGAN U, OODGE CITY
 STOFFER, BERT E, SUN CITY, AZ
 STOFFER, ROBERT P, HALSTEAD
 STOKES, ROBERT LEE, KANSAS CITY
 STOLZ, ELMER G, WICHITA
 STONE, G REX, MANHATTAN
 STONE, GRANT C, ATTICA
 STOPPLE, JOHN A, OLATHE

STOSKOPF, LAWRENCE E. WICHITA
STOUT, JAMES M. HUTCHINSON
STOUT, NILES M. LYNDON
STRAHM, WAYNE J. INDEPENDENCE
STRANGE, MICHAEL, WICHITA
STREET, DAVID E. WICHITA
STREHLER, CHESTER H. OTTAWA
*STRICKLAND, MAURICE H. VAN, WICHITA
STRUTZ, WILLIAM C. LEAVENWORTH
*STRYKER, TERRY MARGARET, WICHITA
STRYKER JR, HENRY B. CONCORDIA
STUBBLEFIELD, CHARLES T. KANSAS CITY
STUCKY, DEAN E. MEDICINE LODGE
STUMP, HARL G. HAYS
SUERO, JESUS T. WICHITA
SUFU, MOHAMMAD ASHRAF, TOPEKA
*SUFU, GAISER A. TOPEKA
SUGAR, ROBERT L. SHAWNEE MISSION
SULLIVAN, CORNELIUS J. P. WICHITA
SULLIVAN, LEONARD L. WICHITA
SULLIVAN, TOMMY GRAY, KANSAS CITY
SULLIVAN JR, HENRY B. SHAWNEE MISSION
SUMNER, JOYCE R. HUTCHINSON
SUMNER, MARION M. HUTCHINSON
SUMNER, RALPH N. FREDDONIA
SURFACE, GARDNER A. ELLIS
SUTTON, RICHARD G. TOPEKA
SUTTON JR, RICHARD L. SHAWNEE MISSION
SVODDOA, CHARLES R. CHAPMAN
SWAN, MAJOR MARTIN, GREAT BEND
SWANN, CLAIR L. RUSSELL
*SWANSON, HOWARD J. WICHITA
*SWARTZ, WARREN E. PARSONS
SWEENEY, JAMES G. WICHITA
SWISHER, WILLIAM C. WICHITA
SWOIGGER JR, GLENN, TOPEKA

T

*TADURAN, VIRGILIO, SATANTA
TAMBURINI, MARIO, LEAVENWORTH
TAN, POLY, HALSTEAD
TANDOC JR, VALENTIN T. NEWTON
TANGCHUPONG, CHANTRASIRI, PARSONS
TANGCHUPONG, SAROH, PARSONS
TAPPEN, DANIEL L. TOPEKA
TARGOWNIK, KARL K. TOPEKA
*TARNOFF, GERALD M. TOPEKA
TARNOWER, WILLIAM, TOPEKA
*TATPATI, DANIEL A. WICHITA
*TATPATI, DLGA ADELINA, WICHITA
TAYIEM, ABDEL K. ATCHISON
TAYLOR, ELMER W. SEDAN
TAYLOR, ELWYN J. HUTCHINSON
TAYLOR, RICHARD J. WICHITA
TAYLOR, STEVEN L. WICHITA
TAYLOR, THOMAS F. SALINA
TAYLOR, THOMAS L. KANSAS CITY
TEARE, MAX E. GARDEN CITY
TEJAND, NEDNIO A. HALSTEAD
TEMPERO, STEPHEN J. TOPEKA
TEMPLETON, ARCH W. KANSAS CITY
TENG, SIDE-HONG, KANSAS CITY
TETZLAFF, ARTHUR D. A. SHAWNEE MISSION
THADA, NARONGSAK K. HAYS
THELEN, J. CHRISTINE, WICHITA
THERDU, LEONA F. KANSAS CITY
THIEMANN, A. H. D.D., SUBLETTE
THOMAS, GREGORY MCDUEN, MCPHERSON
THOMAS, JAMES H. KANSAS CITY
THOMAS, R. CULLEN, PRATT
THOMAS, THOMAS V. KANSAS CITY
THOMPSON, DANIEL M. WICHITA
THOMPSON, DANNIE M. KANSAS CITY
THOMS, NORMAN W. TOPEKA
*THOMSEN, STEVEN T. LAWRENCE
THORNTON JR, FOXHALL P. CONCORDIA
THORPE, FRANCIS A. PRATT
THURSTON, DAVID E. TOPEKA
TICE, GALEN M. SHAWNEE MISSION
TIEMANN, WILLIAM H. MANHATTAN
TIHIN, EDWARD N. WICHITA
TIHIN, HENRY N. WICHITA
TILLER, GEORGE R. WICHITA
TILLOTTSON, DON R. ULYSSES
TILTON, FRANK M. WICHITA
TINKER, ROBERT C. WICHITA
TINTEROW, MAURICE M. WICHITA
TIPPIN JR, ERNEST E. WICHITA
TIVORSK, ARKON, ATCHISON
TDALSON, WILLIAM B. KANSAS CITY
TODDER, ALFRED M. WICHITA
TOMPKINS, CARL D. NEWTON
TONN, GERHART R. WICHITA
*TOTH, JOHN ROY, TOPEKA
TOTIEN, FREDERICK E. LAWRENCE
*TODVAR, MANUEL H. WICHITA
TDZER, RICHARD C. TOPEKA
TRACY, TERRY A. WICHITA
TRAVIS, JOHN W. TOPEKA
TREES, CLYDE B. TOPEKA
TREES, DONALD P. WICHITA
TREGER, NEWMAN V. TOPEKA
TREKELL, WILLIAM V. DODGE CITY
TRETBAR, HARVEY A. WICHITA
TRETBAR, LAWRENCE L. SHAWNEE MISSION
TREWEEKE, MICHAEL W. WICHITA
TRIMBLE SR, DAVID P. EMPORIA
TROPP DD, ARNOLD L. SHAWNEE MISSION

TROTTER, ROGER COURTNEY, MINNEDLA
TRUEWORTHY, ROBERT C. KANSAS CITY
TUCKER, DONALD R. SALINA
TUCKER, SHERIDAN G. DE RIDDER, LA
TUCKER, VIRGINIA L. LAWRENCE
TUDONG, TRAN MANH, AUGUSTA
TURNER, JOHN W. GARDEN CITY
TUTERA, GIND, SHAWNEE MISSION
TWEET, FREDERICK A. PITTSBURG
TWEITD, DAVID H. HUTCHINSON
TWEMLD, STUART W. TOPEKA
TYLER, WILLIAM F. FORT SILL, OK

U

UBELAKER, ERNEST J. SOUTH HAVEN
UHLIG, PAUL J. WICHITA
UHR, NATHANIEL, TOPEKA
UNDERWOOD, CHARLES C. EMPORIA
UNREIN, ROBERT J. GREAT BEND
UTLEY, JAMES HARMON, KANSAS CITY
UY, WILSON D. COFFEYVILLE

V

VACHAL, EVA, GARDEN CITY
VAKAS, JOHN L. COFFEYVILLE
VALK, WILLIAM L. KANSAS CITY
VAN DER VLIET, STEPHEN K. WICHITA
VAN THULLENAR, PHILIP A. KANSAS CITY
VANDE GARDE, LARRY D. TOPEKA
VANDER VELDE, STANLEY L. EMPORIA
VANNAMAN, DONALD D. SHAWNEE MISSION
VARGHESE, GEORGE, KANSAS CITY
VATS, TRIBHAWAN S. KANSAS CITY
VAUGHAN, DONNA A. NEWTON
VELARDE, HUGO, SHAWNEE MISSION
VEMIREDDI, NANDA KUMAR, KANSAS CITY, MD
VERMA, ASHA, PARSONS
VILLANUEVA, CESAR L. KANSAS CITY
VIN ZANT, LARRY E. WICHITA
*VINZANT, MARK N. DERBY
VINZANT, WHITNEY L. WICHITA
VISSER, VALYA E. KANSAS CITY
VISWANATHAN, BYRANAN, TOPEKA
VDGT, VERNON W. NEWTON
VOLKMAN II, HARLEY W. MANHATTAN
VDN GKASEMSIRI, SUNAN, NEWTON
VDN LEDNRD JR, GEORGE, DIGHTON
VDN RUOEN, WILLIAM J. HUTCHINSON
VODRHEES, CARROLL D. LEAVENWORTH
VODRHEES, GORDON S. LEAVENWORTH
VOPAT, RICHARD L. KANSAS CITY
VDRHEES, VICTOR J. WICHITA
VOTAPKA, WILLIAM L. STOCKTON
VOTH, DOUGLAS W. WICHITA
VOTH, HAROLD M. TOPEKA
VRANEY, GEORGE, HALSTEAD

W

WADELLE, BILL D. KANSAS CITY
WADE, THEODORE E. LIBERAL
WAUDU, ABDUL, WICHITA
WAGENBLAST, HOWARD R. SALINA
WAGGONER, FRANKLIN E. BONNER SPRINGS
*WAKIM, PAUL E. WICHITA
WALDORF JR, MELVIN H. GREENSBURG
WALKER, JACK D. KANSAS CITY
WALKER, MAURICE A. KANSAS CITY
WALKER, NELLIE G. LEES SUMMIT, MD
WALKER, WILLIAM H. ESKRIDGE
WALKER, WILLIAM K. SEDAN
WALKER, WILLIAM L. WICHITA
WALLACE, LED F. TOPEKA
WALLACE, ROBERT W. SEDDON, AR
WALLACE JR, WAYNE D. ATCHISON
WALLS, WILLIAM J. TOPEKA
WALSH, EUGENE A. ONAGA
WALSH, RICHARD A. WICHITA
WALSH, THOMAS E. ONAGA
WALTERS, BYRON W. LAWRENCE
*WALTERS, ROBERT MERRILL, WICHITA
WALTON, PHILIP D. ALBANY, MD
WALZ, ROYCE C. TOPEKA
WALZ, THOMAS J. ST FRANCIS
WANG, SIDNEY W. SHAWNEE MISSION
WARD, HOWARD N. TOPEKA
WARD, JAMES A. BELLEVILLE
WARD, ROBERT L. STAFFORD
WARE, LUCILE M. TOPEKA
WARREN, LINDA D. WASHINGTON
WARREN, LLOYD P. WICHITA
WARREN, ROGER D. HANDOVER
WARREN, WIRT A. WICHITA
WARREN JR, JOHN W. WICHITA
*WARRICK, DAVID ALAN, TOPEKA
WATERS, CLARENCE N. SALINA
WATERS III, CHESTER H. KANSAS CITY, MD
*WATKINS, PHILIP H. TOPEKA
WATTS, HARRY E. HAYS
WAXMAN, DAVID, KANSAS CITY
WAYLAN, THORNTON L. NASHVILLE
WEARE, MARY E. SHAWNEE MISSION
WEAVER, J. ROBERT, WICHITA
WEAVER, JACK D. WICHITA
WEAVER, WALTER D. TOPEKA
WEBB, JAMES R. SHAWNEE MISSION
WEBER, CLARENCE J. SALINA
WEBER, DARRELL J. TOPEKA
WEBER, ROBERT W. SALINA
WEBER, ROY R. NEWTON
WEBER, WALLACE N. HAYS

WEBER II, RALPH H. SALINA
WEBER JR, HUGO P. WICHITA
*WEBSTER, BOBBY W. WICHITA
WEEDLE, DOUGLAS P. FORT SCOTT
WEDEL, KENNETH D. MINNEAPOLIS
WEDEL, KERMIT G. MINNEAPOLIS
WEDIN, PAUL H. WICHITA
WEIDENSAUL, DAVID N. HUTCHINSON
WEIGAND, JOEL T. WELLINGTON
WEIGEL, JOHN W. KANSAS CITY
WEIPPERT, EDWARD J. WICHITA
WEIR, WILLIAM C. ERIE
WELCH, JACK W. HALSTEAD
WELCH, LAUREN K. WICHITA
WELCH, MARTIN H. WICHITA
WELL, MICHAEL A. LAWRENCE
WELLER, RONALD ALAN, KANSAS CITY
WELLS, ALVIN Y. WINFIELD
WELLS, BRUCE W. WINFIELD
WELLS, MAX W. WINFIELD
WELLSHEAR, CHARLES C. WICHITA
WELTMER, ROGER P. BELDIT
WENINGER, JOHN H. WICHITA
WENZEL, ANNA MARIE, HAYS
WERNER, WILLARD F. TRIBUNE
WERTH, CLAUDE J. SHAWNEE MISSION
WERTZBERGER, JOHN, LAWRENCE
WESBROOK, CLYDE W. N.Y.N.Y.
WESCOBE, W. CLARKE, NEW YORK, NY
WEST, C. DOR, KANSAS CITY
WEST, WILLIAM T. WICHITA
WHALLON, JACOB T. WICHITA
WHEELER, PINCKNEY R. WICHITA
*WHITAKER, JAMES A. WICHITA
WHITAKER, REN R. DORLIN
WHITE, CHARLES L. GREAT BEND
WHITE, CHARLES M. WICHITA
WHITE, DONALD C. COFFEYVILLE
WHITE, FAGAN N. RUSSELL
WHITE, HARRY H. TOPEKA
WHITE, JOHN P. PARSONS
WHITE, R. BURNLEY, WINFIELD
WHITE, THADDEUS M. MANHATTAN
WHITE II, BENJAMIN E. EL DORADO
WHITEHEAD, RICHARD E. SHAWNEE MISSION
WHITLEY, DOUGLAS M. SHAWNEE MISSION
WIEGMAN, HUGH ALAN, HAYS
WIENS, J. WENDELL, NEWTON
WIENS, PETER K. NESS CITY
WIGGINTON, GERALD D. D.D., SHAWNEE MISSION
WIGGS, JAMES W. GREAT BEND
WIKSTEN, VERNON C. TOPEKA
WILCHINS, LAWRENCE J. LAS VEGAS, NV
WILCOX, DONALD E. TOPEKA
WILCOX, GENE M. EXEC SEC. WINFIELD
WILCOX JR, HOWARD L. HAYS
WILCOX SR, HOWARD L. LAWRENCE
WILDER, LOWELL W. WICHITA
WILDS, CHARLES E. TOPEKA
WILEY, HORACE M. GARDEN CITY
WILEY, JOHN H. SHAWNEE MISSION
*WILKINSON, LARRY K. WICHITA
WILLIAMS, CHARLES L. WICHITA
WILLIAMS, EVAN ROBERT, DODGE CITY
WILLIAMS, HOMER J. DSAGE CITY
WILLIAMS, HOWARD V. TOPEKA
WILLIAMS JR, STERLING B. KANSAS CITY
WILLIAMSON, JOHN, HUTCHINSON
WILLIAMSON, JOHN A. KANSAS CITY
WILSON, COL JAMES W. FT RILEY
WILSON, H. RANDOLPH, HALSTEAD
WILSON, L. BARRICK, SHAWNEE MISSION
WILSON, MARVIN H. TOPEKA
WILSON, ROBERT B. SHAWNEE MISSION
WILSON, ROBERT L. VALLEY CENTER
WILSON, SLON J. SHAWNEE MISSION
WINBLAD, JAMES N. WINFIELD
WINCHELL, H. H. FDRSYTH, WICHITA
WINCHESTER, EUGENE B. WICHITA
WING, NANCY J. TOPEKA
WINTER JR, CALVERT J. KANSAS CITY
WISDOM, JAY K. WICHITA
WISNER JR, HARRY J. WICHITA
WITTMANN, ALBERT F. WICHITA
WOLF, CURTIS V. LYONS
WOLF, KARL T. KANSAS CITY
WOLFE, FREDERICK, WICHITA
WOLFE, JOHN E. HUTCHINSON
WOLFFENBARGER, KEITH A. HOISINGTON
WOLFF, FREDERICK P. PRATT
WOLKOFF, A. STARK, KANSAS CITY
WOLLMANN, MARTIN, LAWRENCE
WONG, BERT Y. KANSAS CITY
WONG, NORMUND, TOPEKA
WODD, DOUGLAS H. PITTSBURG
WODD, GARY B. WICHITA
WODD, ROBERT D. HORTON
WODDARD, LAWRENCE E. WICHITA
WODDHOUSE, CHARLES L. WICHITA
WODDS, HUGH J. SMITH CENTER
WODDS, ROBERT P. TOPEKA
*WODLLOTT JR, PHILIP, WICHITA
WORTHMAN, JACK A. HUTCHINSON
WRAY, ALEXANDER J. WICHITA
WRIGHT, KENDALL M. EMPORIA
WRIGHT, M. ERIK, LAWRENCE
WRIGHT, STANLEY E. JUNCTION CITY
WRIGHT JR, ROBERT W. KANSAS CITY
WULFF, EDWIN T. ATCHISON
WURSTER, GEORGE R. SHAWNEE MISSION

Y
YAGHMOUR, TALAAT E., PITTSBURG
YE, RICHARD C., SHAWNEE MISSION
YEDMANS, RONALD N., OLATHE
YODER, EMERSON D., DENTON
YODER, VERNON E., HESSTON
YOME, RUTH W., SHAWNEE MISSION
YDUMANS, ROGER L., AFRICA,
YOUNG, CHARLES H., ATCHISON
*YOUNG, DOUGLAS L., WICHITA
YOUNG, JOHN W., SHAWNEE MISSION
YOUNG, THEODORE E., TOPEKA
YOUNGBERG, DEAN I., WICHITA
YOUNGSTROM, KARL A., SHAWNEE MISSION
YULICH, JOHN D., KANSAS CITY

Z
ZABEL, KENNETH D., PITTSBURG
ZACHARIAS, CARL KURT, ODOGE CITY
ZACHARIAS, DAVID LLOYD, TOPEKA
ZACK, ASHLEY S., SHAWNEE MISSION
ZAMIEROWSKI, DAVID S., SHAWNEE MISSION
ZAREMSKI, SHERMAN C., SHAWNEE MISSION
ZARNOW, HILARY, WICHITA
*ZATZKIN, JAY B., WICHITA
ZELLER, MYRON J., GARDEN CITY
ZIEGLER, DEWEY K., KANSAS CITY
ZIMMERMAN, DANIEL D., SHAWNEE MISSION
ZIMMERMAN, KENNETH D., WICHITA
ZIMMERMAN, WILLIAM H., TOPEKA
ZINN, THOMAS W., KANSAS CITY
ZONGKER, PHILIP E., WICHITA

* Probationary members.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612

G-N

MEDICAL EQUIPMENT SERVICE

- factory authorized and trained service men
- repairs or adjustments in office
- loaners available for most major equipment
- midwest's most complete sales and service center

The GOETZE-NIEMER Co.

1701 Brooklyn, K.C., MO. 816-231-1900
serving the Midwest since 1884

Medical Specialty Codes as Recognized by the AMA and Used in This Directory

A	Allergy	ON	Oncology
ADL	Adolescent Medicine	OPH	Ophthalmology
ADM	Administrative Medicine	OST	Osteopathy
AI	Allergy and Immunology	OT	Otology
AM	Aviation Medicine	OTO	Otorhinolaryngology
ANES	Anesthesiology	P	Psychiatry
BE	Broncho Esophagology	CHP	Child Psychiatry
BLB	Bloodbanking	PA	Pharmacology
CD	Cardiovascular Disease	PATH	Pathology
CLG	Clinical Gerontology	PED	Pediatrics
CP	Clinical Pharmacology	PDA	Pediatric Allergy
D	Dermatology	PDC	Pediatric Cardiology
DIA	Diabetes	PDE	Pediatric Endocrinology
DMP	Dermatopathology	PDO	Pediatric Ophthalmology
DR	Diagnostic Roentgenology	PDR	Pediatric Radiology
EM	Emergency Medicine	PDS	Pediatric Surgery
END	Endocrinology	PHO	Pediatric Hematology
ENT	Ear, Nose and Throat	PNP	Pediatric Nephrology
FOP	Forensic Pathology	PH	Public Health
FP	Family Practice	PM	Physical Medicine and Rehabilitation
GE	Gastroenterology	PUD	Pulmonary Disease
GEN	Genetics	R	Radiology
GER	Geriatrics	RES	Resident
GYN	Gynecology	RHU	Rheumatology
HEM	Hematology	RHI	Rhinology
HM	History of Medicine	RIP	Radioisotopic Pathology
HYP	Hypnosis	RO	Radiology/Oncology
ID	Infectious Diseases	RT	Radiation Therapy
IE	Insurance Examination	GS	General Surgery
IG	Immunology	ABS	Abdominal Surgery
IM	Internal Medicine	CDS	Cardiovascular Surgery
LAR	Laryngology	CRS	Colon and Rectal Surgery
LM	Legal Medicine	HNS	Head and Neck Surgery
MO	Medical Oncology	NS	Neurological Surgery
NA	Neuropathology	ORS	Orthopedic Surgery
ND	Neoplastic Diseases	PS	Plastic Surgery
NEP	Nephrology	SP	Staff Physician
NM	Nuclear Medicine	TS	Thoracic Surgery
NP	Neuropsychiatry	TRS	Traumatic Surgery
NPM	Neonatal-Perinatal Medicine	U	Urology
NR	Nuclear Radiology	OO	Retired
OBG	Obstetrics and Gynecology	OS	Other Than Those Above
OM	Occupational Medicine	US	Unspecified

Physician Distribution by Cities

EXPLANATION OF CODES USED IN THIS SECTION

Line 1: Doe, John R., 1234 Oak St., 67052
 (Name) (Street Address) (Zip Code)

Line 2: (654-2222)
 (Telephone Number)

Line 3: 33 M 1902 58 FP
 (Year of Birth) (Sex) (Medical School) (Year of Graduation) (Specialty)

Telephone area code follows city name. * Probationary Members

ABILENE—913 (Dickinson County Society)

BERKLEY, DDN H., 1111 N 8PADY, 67410
 263-4131
 35 M 1902 61 FP

BIGGS, DENNIS, 515 NE 10TH, 67410
 263-7190
 48 M 1902 74 FP

BUTCHER, ARCHIE W., 303 HILLTOP DR, 67410
 -
 01 M 1902 35 OD

CHAFFEE, DEAN C, PROFESSIONAL BLDG, 67410
 263-4131
 11 M 1902 44 FP

COLEMAN, GARY, 515 NE TENTH, 67410
 -
 M

HEINS, LAWRENCE G, RR #5, 67410
 -
 97 M 4102 21 OD

MOHLER, JACK M., 1111 N BRADY, 67410
 263-4131
 32 M 1902 61 FP

NARCISO, VICENTE D., 515 NE 10TH ST, 67410
 263-2253
 45 M 74810 68 G5

ORDABAUGH, DONALD C, PROFESSIONAL BLDG, 67410
 263-4131
 33 M 1902 58 FP

SCHWARTING, J STEVE, 515 NE 10TH, 67410
 263-7190
 40 M 3401 72 FP

ALMA—913 (Pottawatomie County Society)

MCKNIGHT, ELLIS B., 66401
 765-3317
 03 M 1902 33 FP

ALTAMONT—316 (Labette County Society)

JACKSON, VICTOR L., BOX 467, 67330
 784-5318
 20 M 2105 50 FP

ANDALE—316 (Sedgewick County Society)

STECH, JOSEPH W., ANDALE CLINIC, 67001
 445-2152
 27 M 3006 56 FP

ANTHONY—316 (Tri-County Society)

ANTRIM, PHILIP JENIFER, 1101 E SPRING, 67003
 842-5144
 15 M 1902 42 FP

HALL, JERRY D., 1101 E SPRING, 67003
 842-5144
 31 M 3901 56 FP

ARKANSAS CITY—316 (Cowley County Society)

ALVAREZ, NORBERTO, 112 E CENTRAL, 67005
 442-4850
 27 M 27501 53 FP

AUCAR, ALFREDO, BOX 1105, 67005
 442-1710
 23 M 27501 53 DTD

BRALEY, JACK A, D.D., 1501 N 7TH, 67005
 442-6660
 29 M 1875 68 1M

CAMPBELL, GARLAND L., 114 W WALNUT, 67005
 442-1350
 13 M 1902 40 U

FARRAR JR, WILLIAM H., 2508 EDMONT, 67005
 442-8200
 44 M 1902 70 1M

GREEN, LAWRENCE C, 112 EAST CENTRAL AV, 67005
 442-4850
 43 M 3901 69 FP

HILL, JAMES E, 2508 EDMONT DR, 67005
 442-4300
 09 M 1902 34 DPH

HINSHAW, EDGAR D, RT #3, 67005
 442-1273
 15 M 1902 51 R

HOWARD II, W ROBERT, 2508 EDMONT, 67005
 442-1710
 45 M 1902 71 ENT

WEEK, GEORGE C, 323 NORTH SUMMIT, 67005
 442-2100
 05 M 1902 32 FP

OLD, JERRY L, 323 NORTH SUMMIT, 67005
 442-2100
 49 M 1902 74 FP

PEREIRA, WILLY G, 2508 EDMONT DR, 67005
 442-8540
 39 M 73701 67 1M

RICHARDSON, JAY L, 2508 EDMONT DRIVE, 67005
 442-4150
 38 M 1902 65 G5

ROSS, DAVID K, 232 NORTH SUMMIT, 67005
 442-2100
 48 M 1902 75 FP

SINGH, GIRVAR, 2508 EDMONT DR, 67005
 442-4300
 40 M 49555 64 DPH

SMITH, BRUCE G, 115 E RADIO LANE, 67005
 442-5600
 20 M 1902 44 1M

SMITH, NEWTON C, A C CLINIC, 67005
 442-2100
 21 M 3901 45 FP

SMITH, STEPHEN J, 115 HILLSIDE, 67005
 442-5600
 45 M 1902 71 FP

ARMA—316 (Crawford County Society)

RIGLER, WILSON F, 511 WASHINGTON, 66712
 347-8619
 42 M 1803 69 FP

ASHLAND—316 (Iroquois County Society)

LEE, JOSEPH R., 67831
 635-2724
 25 M 24351 50 FP

MCKINLEY, GEORGE ANDREW, BOX 707, 67831
 635-2222
 47 M 1902 75 FP

ATCHISON—913 (Atchison County Society)

BUSSE, FRANK K, 1301 RIVERVIEW DRIVE, 66002
 -
 09 M 2802 33 OD

BRADY, CHARLES S, 111 N 5TH ST,66002
367-1232
11 M 3006 38 GS
BRIBACH, EUGENE J, 125 1/2 N 5TH,66002
367-0225
83 M 2802 05 OPH
BROWN, ROBERT D, 1400 NORTH 2ND,66002
367-1922
14 M 1902 44 FP
BURKE, JOSEPH V, 1301 N 3RD,66002
367-5496
35 M 3006 66 GS
FAST, ROBERT E, 1225 N 2ND,66002
367-0362
48 M 1902 74 OBG
FAST, W SPENCER, RAMSAY MED CLINIC,66002
367-0362
11 M 3006 39 FP
GROWNEY, JOHN T, 801 ATCHISON,66002
367-5020
37 M 3006 63 FP
HART, LAWRENCE E, 1412 N 2ND,66002
367-5054
32 M 1902 64 FP
MORRISON, IRA R, 825 N 10TH,66002
367-4396
07 M 1611 36 1M
RIDER, JAMES W, 1225 N 2ND ST,66002
367-0362
47 M 2803 73 FP
TAYIEM, ABOEL K, 1225 N 2ND,66002
367-0362
43 M 33002 68 GS
TIVORSK, ARKOM, 1716 COUNTRY LANE,66002
367-2131
40 M 89101 68 R
WALLACE JR, WAYNE D, 1301 N THIRD,66002
367-7300
36 M 2803 65 FP
WULFF, EDWIN T, 111 N 5TH,66002
367-5033
07 M 2834 36 FP
YOUNG, CHARLES H, 1301 N 3RD,66002
367-4053
23 M 1902 53 FP

ATTICA—316
(Tri-County Society)

STONE, GRANT C, 215 W AVE D,67009
254-7219
08 M 5605 35 FP

ATWOOD—913
(Northwest Kansas Society)

OILL, RODNEY SIDNEY, 411 PAGE,67730
626-3229
41 M 77 GP
FITZGERALD, EARL JAMES, 411 PAGE,67730
-

HENNEBERGER, CHARLES E, 234 NORTH 7TH,67730
626-3311
86 M 4101 10 GS

AUGUSTA—316
(Butler-Greenwood Society)

ANDERSON, DALE W, 209 D WEST 7TH STREET,67010
775-5432
30 M 1902 55 FP
BARBER, JAMES L, AUGUSTA PLAZA,67010
775-5432
31 M 1902 57 FP
TUONG, TRAN MANH, AUGUSTA PLAZA,67010
775-5432
39 M 65 GP

BAXTER SPRINGS—316
(Cherokee County Society)

ALOUIST, VERYL D, 21ST & FAIRVIEW,66713
623-4942
17 M 1902 42 GS
CHUBB, RICHARD M, 445 EAST 10TH,66713
856-2444
29 M 1606 54 FP

MEHAFFY, ORVILLE A, 411 E 11TH,66713
856-2383
42 M 1902 69 FP
MOU, BIN, 445 E TENTH,66713
856-2444
23 M 24402 50 IM/P

BELLEVILLE—913
(Republic County Society)

BEIDERWELL, PAUL L, 2703 M ST,66935
-
08 M 3901 38 FP
CHANEY, ERNIE J, 2316 G STREET,66935
527-2237
27 M 1902 56 FP
DOUBEK, HERBERT D, 2316 G ST,66935
527-2237
28 M 1902 56 FP
SCOTT, DUANE L, BELLEVILLE CLINIC,66935
527-2217
34 M 1902 60 FP
WARD, JAMES A, 1206 18TH ST,66935
527-2217
34 M 1902 58 FP

BELOIT—913
(Mitchell County Society)

DOBRTATZ, ROBERT A, 310 W 8TH,67420
738-2246
24 M 1902 52 FP
DRAKE, DOUGLAS J, MEDICAL CENTER,67420
738-2246
43 M 1902 71 FP
KLENOA JR, MARTIN B, BELOIT MED CENTER,67420
738-2246
38 M 1643 63 GS
LONEY, JOHN M, 310 WEST 8TH,67420
738-2246
50 M 1902 74 1M
WELTNER, ROGER P, 112 W MAIN,67420
738-2574
18 M 1902 44 U

BLUE RAPIDS—913
(Northeast Kansas Society)

LAWLESS, HAROLD L, 607 LINCOLN,66411
226-7202
29 M 702 54 FP

BONNER SPRINGS—913
(Wyandotte County Society)

MAY, KENNETH L, 122 N NETTLETON,66012
422-2020
20 M 1902 51 FP
MITTS, ERNEST W, 122 N NETTLETON,66012
422-2020
22 M 1902 51 FP
WAGGONER, FRANKLIN E, 122 N NETTLETON,66012
422-2020
26 M 1902 61 FP

BUHLER—316
(Reno County Society)

FRIESEN, ORLANDO J, 107 W 2ND,67522
543-2330
27 M 1902 56 FP

BURLINGTON—316
(Flint Hills Society)

MCCONNELL, ARCHIE B, ,66839
-
90 M 3901 15 00

CALDWELL—316
(Tri-County Society)

KINNAN, L F, 523 S MARKET, 67022
 845-6422
 18 M 3901 42 FP

CANEY—316
(Southeast Kansas Society)

MOORE, ROBERT F, 4TH & MCGEE, 67333
 879-2135
 28 M 1902 56 FP

CANTON—316
(McPherson County Society)

CANELLOS, JAMES, PO BOX 276, 67428
 367-2205
 30 M 86902 62 FP

CEDAR VALE—316
(Southeast Kansas Society)

COHNBERG, ROSELLEN E, PO BOX 398, 67024
 758-2266
 22 F 2802 47 FP

CHANUTE—316
(Southeast Kansas Society)

ABBUHL, DON R, 505 SOUTH PLUMMER, 66720
 431-2500
 18 M 1902 44 GS
 ASHLEY, SAMUEL G, 505 SOUTH PLUMMER, 66720
 431-2500
 16 M 1902 43 FP
 BAKER, HENRY K, 811 WEST MAIN, 66720
 431-1600
 08 M 1606 35 GS
 BURKMAN, REUBEN J, 1501 W 7TH, 66720
 431-9310
 28 M 1902 54 FP
 DICK JR, HENRY J, 1501 W 7TH, 66720
 431-9310
 27 M 1902 58 FP
 GEHRT, EARL B, 1101 S LARSON, 66720
 431-2500
 32 M 1902 62 FP
 HASKINS, ROBERT J, 505 S PLUMMER, 66720
 431-2500
 46 M 1902 74 FP
 HUDSON, JAMES R, 616 HILLSIDE, 66720
 431-4000
 37 M 1902 63 R
 KIHM, ALBERT A, 505 S PLUMMER, 66720
 431-2500
 27 M 1902 55 FP
 MIN, ALEXANDER, 1002 WEST 4TH, 66720
 473-2227
 22 M 24209 47 ANE5

CHAPMAN—913
(Dickinson County Society)

SVOBODA, CHARLES R, 413 N MARSHALL, 67431
 922-6400
 18 M 1902 46 FP

CHERRYVALE—316
(Labette County Society)

MCKENZIE, STEVE LEWIS, 216 E FOURTH, 67335
 336-2131
 47 M 2878 77 GP

CHETOPA—316
(Labette County Society)

PEFFLY, ELMER O, 327 MAPLE, 67336
 236-7188
 22 M 3901 53 FP

CLAY CENTER—913
(Clay County Society)

ANDERSON, SEVERT A, 1749 BERGLUND DR, 67432
 -
 07 M 1902 36 00
 CARLETON, RICHARD C, 709 LIBERTY, 67432
 632-5603
 31 M 3005 61 FP
 MCILVAIN, GUY B, 1601 THIRO, 67432
 -
 97 M 1643 25 00
 MCVAY, R BRUCE, 1503 FIFTH ST, 67432
 -
 97 M 1902 29 00
 O'DONNELL, RICHARD H, 709 LIBERTY, 67432
 632-3101
 16 M 1902 41 G5
 RICHARDS, DENNIS O, 115 S 6TH, 67432
 632-5621
 34 M 1902 60 FP

CLYDE—913
(Cloud County Society)

FREEBORN JR, WARREN S, 66938
 446-2221
 26 M 1720 51 FP

COFFEYVILLE—316
(Southeast Kansas Society)

BRYANT, HOMER L, 803 W 9TH, 67337
 259-3890
 99 M 3501 30 OPH
 CAMPBELL, WILLIAM H, 1411 W 4TH, 67337
 251-3235
 39 M 1902 65 OPH
 COYLE, JOHN F, 209 W 7TH, 67337
 251-2400
 21 M 1902 44 FP
 DICKINSON, CHARLES R, 108 W 7TH, 67337
 251-1340
 20 M 1606 44 G5
 DIXON, RAYMOND W, 1411 W 4TH, 67337
 251-1090
 M
 EOROZO, M LUZ LUNA, MEMORIAL HOSPITAL, 67337
 251-1200
 F 74801 68 PATH
 ELLIS, STEPHEN S, 1411 W 4TH, 67337
 251-3360
 11 M 2802 36 G5
 GIBBS, EUGENE, 808 WILLOW, 67337
 251-7260
 M 64914 68 FP
 HA, SANG W, 504 WILSHIRE, 67337
 251-7750
 35 M 58309 60 08G
 HAN, CHAN S, 908 SIGGINS, 67337
 251-1560
 35 M 58306 61 PO
 HOWERTER JR, BERNARD E, 209 W SEVENTH, 67337
 251-4790
 43 M 1803 68 U
 MARTIN JR, ALBERT E, 109 W SEVENTH, 67337
 351-2350
 11 M 1902 37 FP
 READ, WILLIAM T, 1411 WEST 4TH, 67337
 251-1120
 16 M 2802 40 FP
 SANDHU, PAUL S, PO BOX 257, 67337
 251-2450
 42 M 49508 65 GS
 UY, WILSON O, COFFEYVILLE MEM HOSPITAL, 67337
 251-1200
 42 M 74801 67 PATH
 VAKAS, JOHN L, 1508 W 4TH, 67337
 251-3443
 38 M 1902 64 1M
 WHITE, DONALD C, PO BOX 262, 67337
 251-1200
 35 M 3515 65 R

COLBY—913
(Northwest Kansas Society)

DAHL, ASHER W, COLBY CLINIC, 67701
 462-3333
 28 M 1902 58 FP

DUNN, DANIEL R, COLBY CLINIC P D BX 28,67701
 462-3332
 49 M 1902 26 FP
 HASSETT, GERARD R, 1875 HARVEY,67701
 -
 24 M 3006 50 R
 HILDYARD, VICTOR H, COLBY CLINIC,67701
 462-3333
 16 M 1902 42 OTU
 HILOYARD 11, VICTOR H, BDX 28,67701
 462-3332
 47 M 702 73 FP
 JACOBSEN, DWIGHT SKINNER, COLBY CLINIC,67701
 -
 31 M 3545 60 GS
 MARSHALL, GEORGE O, COLBY CLINIC,67701
 462-3333
 09 M 1902 36 FP
 REGIER, LADDNNA M, COLBY CLINIC,67701
 462-3332
 47 F 1902 73 FP
 SMITH JR, FLOYD L, COLBY CLINIC,67701
 462-3333
 20 M 1902 44 FP

COLDWATER—316
(Iroquis County Society)

CHOUDHURY, M HASAN, 139 E MAIN ST PD BDX 65,67029
 582-2136
 46 M 70410 69 GS
 GOERING, DONALD D, BOX 576,67029
 582-2136
 31 M 1902 56 FP

COLUMBUS—316
(Cherokee County Society)

BELCHER, GEORGE D, BDX 309,66725
 429-2557
 34 M 1902 60 FP
 JONES, FORREST H, 219 S KANSAS,66725
 429-3744
 25 M 1902 54 FP
 PASIMIO, ROGER S, R2 BDX 259,66725
 429-1977
 38 M 74801 62 GS

COLWICH—316
(Sedgwick County Society)

LIES, BARTHEL N, 123 E WICHITA,67030
 796-1255
 11 M 2802 37 FP

CONCORDIA—913
(Cloud County Society)

BRAY, AVIS PAGE, 1010 3RD AVE,66901
 243-1560
 17 F 702 54 FP
 BUTT, MUHAMMAD, CONCORDIA MED GROUP,66901
 243-1560
 46 M 70401 69 GS
 FOWLER, WAYNE L, CONCORDIA MED GRDUP,66901
 423-1560
 23 M 1720 47 1M
 GELVIN, E RAYMOND, 835 WEST 9TH,66901
 243-1560
 03 M 3005 27 GS
 HAYDEN, ABIGAIL, SUNSET HOME,66901
 -
 88 F 1902 35 DD
 HOFER, DEWAYNE D, COUNTRY CLUB RD,66901
 243-1263
 36 M 1606 62 R
 KOSAR, CLARENCE O, 8DX 362,66901
 -
 98 M 1902 26 DD
 LAWTON, MARVIN K, CONCORDIA MED GROUP,66901
 243-1560
 31 M 3005 58 GS
 LLOYD, JAMES W, 810 WEST 11TH,66901
 243-7011
 44 M 1902 73 FP
 MCCOMAS JR, MARMADUKE D, 11TH & WASHINGTON ST,66901
 243-2511
 16 M 1902 43 U

MOORE, JAMES E, 520-8 WASHINGTON,66901
 243-1094
 48 M 1902 74 P
 NELSON, PAUL L, 1010 THIRD AVE,66901
 243-1560
 27 M 1902 55 PD
 NIXON, RICHARD R, 519 WASHINGTON,66901
 243-1263
 32 M 1643 57 R
 RUZICKA, LAWRENCE J, 1010 3RD AVE,66901
 243-1560
 13 M 3005 40 ANES
 STRYKER JR, HENRY B, 717 FIRST AVE,66901
 -
 19 M 3501 44 DD
 THORNTON JR, FOXHALL P, 1010 3RD AVE,66901
 243-1560
 25 M 5101 50 1M

COTTONWOOD FALLS—316
(Flint Hills Society)

MCKEE, LEO F, ,66845
 273-6681
 16 M 1902 39 FP

COUNCIL GROVE—316
(Flint Hills Society)

BARKER, ROYAL A, 221 HOCKADAY,66846
 767-5126
 21 M 1902 53 FP
 BLACKBURN, ROBERT W, 221 HOCKADAY,66846
 767-5126
 22 M 1902 49 FP
 SCHULTZ, JAMES E, 221 HOCKADAY,66846
 767-5126
 26 M 1902 56 FP

CUNNINGHAM—316
(Wyandotte Society)

ALLBRITTEN JR, FRANK F, PD BDX 177,67035
 -
 14 M 4101 38 DD

DENTON—913
(Northeast Kansas Society)

YDDER, EMERSON D, ,66017
 359-6531
 14 M 1902 49 FP

DERBY—316
(Sedgwick County Society)

MCKERRACHER, ROBERT D, 400 A NORTH BALTIMORE,67037
 688-1779
 27 M 3901 55 FP
 MOYER, HERMAN J, 200 S BALTIMORE,67037
 788-1484
 24 M 3901 55 FP
 OLIVER JR, JAMES H, 229 S GEORGIE,67037
 788-2867
 30 M 1606 57 AM
 VINZANT, MARK N, 200 S BALTIMORE,67037
 788-1484
 45 M 64914 75 FP

DIGHTON—316
(Southwest Kansas Society)

VDN LEDNROD JR, GEORGE, PD BDX 146,67839
 397-5314
 16 M 1902 43 FP

DODGE CITY—316
(Ford County Society)

AMAWI, MOHAMMAD S, DODGE CITY MED CENTER,67801
 225-1371
 46 M 87501 71 GS
 AVILA, OSCAR A, DODGE CITY MED CENTER,67801
 225-1371
 41 M 17603 69 1M

82 (DODGE CITY-EMPORIA)

AYUTHIA, ISSARA I, 1302 W BRIER,67801

40 M 89101 66 PATH
BAUM, ARNOLD H, DODGE CITY MED CENTER,67801
225-1371

16 M 2107 44 OBG
BOLES, R DALE, DODGE CITY MED CENTER,67801
225-1371

23 M 3901 53 PO
BROWNRIGG, RICHARD L, DODGE CITY MED CENTER,67801
225-1371

35 M 1902 61 U
BUSCH, ANTHONY R, SOUTHWEST CLINIC,67801

05 M 2002 31 00
CHOTIMONGKOL, ANUPONG, DODGE CITY MED CENTER,67801
225-1371

43 M 89102 69 OBG
CONARO, CLAIR C, DODGE CITY MED CENTER,67801
225-1371

27 M 1902 55 IM
JAMBOR, JAMES J, 304 HWY 56 WEST,67801
227-3213

20 M 2307 46 O
JOHNSON, HOWELL O, DODGE CITY MED CENTER,67801
225-1371

45 M 1902 71 IM
KUNAWUTHIDE, KAMOLTIPIYA, DODGE CITY MED CENTER,67801
225-1371

45 F 89101 61 PO
MCCOY, RONALD, SOUTHWEST CLINIC,67801
227-3141

19 M 3901 47 FP
MCELHINNEY, CHARLES F, DODGE CITY MED CENTER,67801
227-1371

36 M 1902 62 GS
MIMOSO, JOSE J, SOUTHWEST CLINIC,67801
227-3141

37 M 4201 61 OBG
OHMAN, RICHARD J, 714 SECOND AVE,67801
227-2106

15 M 2407 41 GS
REDDY, SATTI S, DODGE CITY MED CENTER,67801
225-1371

35 M 49504 66 U
SCHWARTZ, EUGENE W, 1ST NATL BANK BLDG,67801
225-4261

24 M 1902 50 OPH
STOCKWELL, MORGAN U, 1904 BURR PARKWAY,67801
227-1371

24 M 1902 55 IM
TREKELL, WILLIAM V, SOUTHWEST CLINIC,67801
227-3141

25 M 1902 52 ORS
WILLIAMS, EVAN ROBERT, DODGE CITY MED CENTER,67801
227-1371

25 M 1606 52 FP
ZACHARIAS, CARL KURT, DODGE CITY MED CENTER,67801
227-1371

21 M 40707 47 ORS

EL DORADO—316 (Butler-Greenwood Society)

BRIAN, ROBERT M, 123 N ATCHISON,67042
321-1230

02 M 1606 30 FP
DELLETT, KENNETH B, 5TH & MAIN PLAZA,67042
321-1910

30 M 1902 55 OPH
GIRDO, CHARLES I, 123 N ATCHISON ST #103,67042
321-4981

11 M 4706 44 GS
HAFFNER, WILLIAM N, 123 N ATCHISON,67042
321-5049

35 M 1902 61 GS
JACOB, KANNAMPALLY L, 123 N ATCHISON,67042
321-0056

31 M 49537 59 U
JOHNSON, JOSEPH H, 119 N JONES BOX 1288,67042
321-3430

99 M 401 27 EENT
KASSERBAUM, GLEN E, 123 N ATCHISON,67042
321-5082

98 M 1606 23 GS
LEE, YONG U, 123 N ATCHISON,67042
321-5630

35 M 60 GS
LOWRY, RAY F, 202 N MAIN,67042
321-9122

13 M 1902 45 FP
OLSEN, PHILLIP S, 123 N ATCHISON,67042
321-2100

46 M 1902 73 IM

OVERHOLSER, NORMAN H, 119 N JONES,67042

321-2010
16 M 1902 41 FP
PROCTOR, ROBERT W, 119 N JONES,67042
321-2010

38 M 1902 63 FP
SANDBERG, CHRIS B, 119 NORTH JONES,67042
321-2010

48 M 1902 74 FP
SHIELDS JR, JAMES M, 119 N JONES,67042
321-2010

18 M 4802 42 FP
WHITE II, BENJAMIN E, 119 N JONES,67042
321-2010

27 M 1902 54 FP

ELKHART—316 (Seward County Society)

PERIOD, DOMINADOR T, BOX 997,67950
697-2155
44 M 74801 68 GS

ELLINWOOD—316 (Barton County Society)

LAW, FINOLEY, MEDICAL ARTS BLDG,67S26
564-2170
22 M 1902 51 FP

MORRISON, RICHARD L, 611 N MAIN,67S26
564-2423
42 M 1902 67 FP

ELLIS—913 (Central Kansas Society)

ROCHANAYON, PIRA, 814 JEFFERSON ST,67637
726-4956
43 M 89101 69 FP

SURFACE, GARONER A, 1204 WASHINGTON ST,67637
02 M 1902 29 00

ELLSWORTH—913 (Central Kansas Society)

DAVIS, GEORGE R, 308 KINGSLEY,67439
472-3121
19 M 1902 44 GS

O'DONNELL, HAROLD F, 412 BLAKE,67439
99 M 1902 26 00

SEITZ JR, JOSEPH E, 308 KINGSLEY,67439
472-3121
22 M 1902 46 FP

EMPORIA—316 (Flint Hills Society)

BRADLEY, H RUSSELL, 1601 STATE,66801
343-2900
35 M 1902 61 FP

BROCKHOUSE, JOHN P, 1601 STATE,66801
343-2900
31 M 1902 57 IM

BURGESSON, FRANK G, 1601 STATE,66801
342-6989
40 M 3005 65 OPH

BUTCHER, THOMAS P, 1128 LAWRENCE,66801
342-0722
05 M 1601 34 GS

CAMPBELL, EDWARD G, 1601 STATE,66801
343-2900
31 M 1902 61 FP

COLOSMITH, DONALD C, 1024 W 12TH,66801
342-7047
26 M 1902 58 FP

CONARD, RICHARD F, NEWMAN HOSPITAL,66801
342-7722
16 M 1902 42 R

COX, JACK A, 1601 STATE,66801
343-6990
36 M 702 66 ENT

DAVIS, DAVID R, 1025 STATE ST APT #2,66801
342-0646
02 M 2101 28 00

EDWARDS, DAVID J, 1601 STATE ST,66801

343-1191

43 M 2803 69 ORS

FRAZIER, RICHARD L, 1005 W 12TH,66801

342-5137

40 M 1902 72 GS

GANN, E LAMONTE, RR #2,66801

-

07 M 2802 37 00

GARCIA, GOULD C, 919 WEST 12TH AVE,66801

342-2521

32 M 3607 58 1M

GEITZ, JAMES M, 919 W 12TH,66801

342-2521

46 M 1902 72 1M

GINAVAN, DUANE A, 1024 W 12TH,66801

342-5876

35 M 1902 62 FP

GLENN, JAMES N, 1601 STATE,66801

343-1191

40 M 4804 66 ORS

HARVEY, JOHN E, 1601 STATE,66801

343-2900

39 M 1902 65 08G

HAVENHILL II, MARSHALL A, 812 ANDERSON ST,66801

343-6400

35 M 1902 61 08G

HOPPER, CHARLES R, 25 W 5TH,66801

342-2341

17 M 1902 47 FP

KNECHT, STEPHEN M, NEWMAN MEMORIAL HOSP,66801

342-7722

44 M 1902 70 R

LOHMEYER, KENNETH L, 1024 WEST 12TH,66801

342-6622

18 M 1902 44 FP

LUEDTKE, WALTER E, NEWMAN MEM HOS,66801

343-6800

18 M 5605 43 PATH

MIGUELINO, OLIVER M, NEWMAN HOSP,66801

343-6800

35 M 74801 57 PATH

MORGAN, JOHN L, 919 WEST 12TH,66801

342-2521

15 M 4101 40 1M

NEIGHBOR, RALPH M, 827 COMMERCIAL ST,66801

343-6565

46 M 1902 72 08G

NEUER, FREDERICK S, NEWMAN HOSP,66801

342-7722

46 M 3601 71 R

PARKER, WAYNE G R, EMPORIA STATE UNIVERSITY,66801

343-1200

27 M 1902 56 FP

PASTOR, VICTOR HUGO, 1601 STATE,66801

342-7715

43 M 13202 68 U

RYAN, EDWARD J, 919 WEST 12TH,66801

342-2521

12 M 1902 36 1M

RYAN, W SCOTT, 1601 STATE ST,66801

343-2900

47 M 1902 73 PO

SAUL, F WILLIAM, ROUTE #5,66801

-

07 M 4113 40 00

SCHELLINGER, RICHARD P, 1128 LAWRENCE,66801

342-0722

22 M 3005 49 GS

SNOWBARGER, MARVIN D, 1601 STATE STREET,66801

343-2900

29 M 1902 55 FP

TRIMBLE SR, DAVID P, 517 MERCHANT STREET,66801

342-2572

04 M 1902 32 OPH

UNDERWOOD, CHARLES C, 25 WEST 5TH,66801

342-2341

07 M 1902 32 1M

VANDER VELOE, STANLEY L, 1601 STATE,66801

343-2900

16 M 1902 43 GS

WRIGHT, KENDALL M, 1024 WEST 12TH,66801

343-2376

45 M 1902 71 FP

ERIE—316

(Southeast Kansas Society)

BRYAN, EMERY C, RT 2 BOX 171,66733

-

04 M 1902 32 00

WEIR, WILLIAM C, 115 S MAIN,66733

244-3771

17 M 2501 42 FP

ESKRIDGE—913

(Flint Hills Society)

WALKER, WILLIAM H, 2ND E CDOAR,66423

449-2301

10 M 2401 38 1M

EUDORA—913

(Douglas County Society)

HOLLAOAY, KENNETH R, 101 WEST 10TH,66025

542-2345

34 M 1902 58 FP

EUREKA—316

(Butler-Greenwood Society)

CISKEY, WILLIAM J, 1602 NORTH ELM,67045

583-7401

47 M 1902 72 FP

SKAER, STANLEY ALLEN, 100 E 16TH,67045

583-7486

40 M 3901 65 GS

FORT SCOTT—316

(Bourbon County Society)

AKERS, GUY I, 710 W 8TH,66701

223-3100

20 M 1902 53 FP

ALOIS, HENRY, 710 W 8TH,66701

223-3100

13 M 1902 41 08G

ALOIS, WILLIAM, 710 WEST 8TH,66701

223-3100

20 M 1902 44 GS

BASHAM, JAMES J, 102 S JUDSON,66701

223-4100

14 M 1902 37 FP

BENAGE, JOHN F, 710 W 8TH,66701

223-3100

32 M 1902 58 08G

BRAUN, EDWARD W, 710 WEST 8TH,66701

223-3100

42 M 1902 68 U

BURKE, JAMES J, 710 W 8TH,66701

223-3100

35 M 2834 61 1M

CHOW, STANLEY Y, 821 BURKE,66701

223-2200

18 M 24222 39 R

OUNSHEE, CARLYLE M, 710 W 8TH,66701

223-3100

32 M 1902 57 GS

GETTLER, DEAN T, 710 WEST 8TH,66701

223-3100

31 M 1902 57 GS

GOOD, JAMES T, 821 BURKE,66701

223-2200

21 M 2802 45 PATH

GRIMALDI, GARY A, 710 W EIGHTH,66701

223-3100

M

IRBY, ADDISON C, 416 S JUDSON,66701

-

05 M 1606 28 00

IRBY, PRATT, 710 WEST 8TH,66701

223-3100

13 M 4705 36 U

MCCANN, PATRICK E, 710 WEST 8TH,66701

223-3100

28 M 1902 59 1M

MCKENNA, MICHAEL J, 102 SOUTH JUDSON,66701

223-4100

38 M 1902 64 FP

NELSON, T EUGENE, 710 W 8TH,66701

223-3100

41 M 1902 69 FP

REEVES, CHARLES S, 710 W 8TH,66701

223-3100

37 M 1902 63 1M

WEDOLE, DOUGLAS P, 710 WEST 8TH,66701

223-3100

43 M 1720 69 FP

FREDONIA—316

(Southeast Kansas Society)

BACANI, OSWALDO, 1324 ROBINSON,66736

378-3700

44 M 74810 70 GS

84 (FREDONIA-GLASCO)

BAYLES, HUGH G. PO BOX 30,66736
378-3412
25 M 1902 52 FP
BEAL, RAYMOND J. 600 MADISON,66736
378-2159
12 M 1902 38 GS
SUMNER, RALPH N. 712 MADISON,66736
378-2311
31 M 1902 57 FP

FT. LEAVENWORTH—913 (Leavenworth County Society)

KRDLL, RICHARD, 16 PICK AVE,66027
682-1933
46 M 3503 72 U

FT. RILEY—913 (Geary County Society)

HOLT, REVLEY DAN, RADIOLOGY DEPT,66531
—
26 M A706 54 R
WILSON, COL JAMES W, CHIEF OF PROBATIONAL SERV,66442
862-9360
26 M 3901 58 PATH

FT. SCOTT—316 (Bourbon County Society)

SPENCER, JOHN HAROLD, 710 W 8TH,66701
223-3100
47 M 1902 74 FP

GARDEN CITY—316 (Southwest Kansas Society)

*ARTILES, BENJAMIN H1PO1, ST CATHERINE HOSP,67846
275-6111
29 M 54 P
AUSTIN, JOHN D. 601 N 6TH,67846
276-23A6
14 M 1601 40 FP
BARNARD III, JAMES A. 1601 HARDING,67846
275-9671
31 M 4812 62 ORG
BEGGS, DAVID F. 609 N 5TH,67846
276-9211
39 M 1902 6A 1M
BIGLER, F CALVIN, GARDEN MED SPECIALISTS,67846
275-9671
31 M 801 57 GS
BRUNO, JAMES W. 1133 KANSAS PLAZA,67846
276-8201
42 M 4706 66 FP
CALBECK, JOHN, 2603 BFLMONT PLACE,67846
—
50 M 1902 75 1M
EICHORN, FRANK D. BOX 719,67846
276-8132
25 M 1902 56 FP
FENTON, ROBERT M. 710 PERSHING,67846
276-8201
20 M 1902 54 FP
FRY, LUTHER L. 1614 BLUFF,67846
275-9671
41 M 1902 67 DPH
GARDINER, TED M. 603 N FIFTH,67846
—
M PO
GILBERT II, JOHN H. BOX 1077,67846
275-9671
A6 M 1902 70 ORS
GREENBERG, GEDRGE E. ST CATHERINE HOSPITAL,67846
276-8241
42 M 401 68 R
JENKINS, EDWARD, 1133 KANSAS PLAZA,67846
276-8201
M 506 61 FP
KALBAC, RICHARD W. 603 N FIFTH,67846
275-9671
45 M 2803 70 ORG
MAXFIELD, RUSSELL J. 1133 KANSAS PLAZA,67846
276-8201
16 M 1902 41 FP
MEYERS, STEPHEN, 603 N 5TH,67846
275-9671
48 M 2834 70 PO
MILLER, ROBERT E. 603 N 5TH,67846
275-9671
26 M 4812 55 GS

PATTERSON, MICHAEL S. 603 N 5TH,67846
275-9671
43 M 1902 69 PM
SPIKES, MARION E. 603 N 5TH,67846
275-9671
26 M 1902 62 FP
TEARE, MAX E. 1007 DAVIS,67846
276-7689
28 M 1902 54 P
TURNER, JOHN W. 210 E SPRUCE,67846
276-3292
13 M 1902 39 FP
VACHAL, EVA. 608 N FIFTH,67846

— F
WILEY, HORACE M. 602 NORTH 6TH,67846
376-6901
12 M 2802 40 GS
ZELLER, MYRON J. BOX 1077,67846
275-9671
38 M 1902 64 OM

GARDEN PLAIN—316 (Sedgwick County Society)

BIERMANN, ALDYSIUS H. ,67050
535-2231
99 M 3006 23 FP
REINHARDT-WULF, TAISSIA L. PO BOX 273,67050
—
19 F 91302 42 OD

GARDNER—913 (Johnson County Society)

HALL OD, KENDALL WM. 427 W MAIN,66030
884-8711
46 M 2878 76 GP
PRIETO, JORGE N. 427 W MAIN,66030
884-8711
45 M 26401 69 GS
REECE, A THOMEN, 121 HICKORY CIRCLE,66030
884-8711
37 M 1902 63 FP
REECE, ADELBERT S. 217 W MAIN,66030
—
01 M 1902 29 FP
REECE, CAROL A. 121 HICKORY CIRCLE,66030
884-8711
37 F 1902 63 PO

GARNETT—913 (Anderson County Society)

DOUGHERTY, THOMAS M. 117 W 6TH,66032
448-5421
28 M 1902 55 FP
HARRIS JR, CLAIR B. 320 S OAK ST,66032
448-5431
17 M 1902 4A FP
LEITCH, DAVID A. GARNETT MEDICAL CENTER,66032
448-5421
38 M 1902 63 FP
STEVENS, MILORED J. 202 W 4TH,66032
448-5454
23 F 1902 47 FP
STEVENS, ROBERT L. 202 WEST 4TH,66032
448-5454
23 M 1902 47 FP

GIRARD—316 (Crawford County Society)

FRIGGERI, ROBERT W. 111 N SUMMIT,66743
724-8723
23 M 1902 51 FP
HALL, WESLEY H. 606 W ST JOHN,66743
724-6154
25 M 1902 57 FP

GLASCO—913 (Cloud County Society)

HARWOOD, CLAUDE J. PO BOX 428,67445
568-2342
25 M 1902 55 FP

GOODLAND—913
(Northwest Kansas Society)

AUSTIN, KENNETH D. 520 MAIN, 67735
899-3633
33 M 3005 63 FP
LONG, LLOYD D. 520 MAIN, 67735
899-5651
37 M 1720 63 FP
MCCULLOUGH, ROBERT C. 126 E 10TH BOX 180, 67735
899-3633
25 M 702 58 GP
OLSON, CLITUS W. 520 MAIN ST, 67735
899-3633
16 M 3005 48 GS

GREAT BEND—316
(Barton County Society)

ALDERSON, THOMAS WHITNEY. 1400 POLK, 67530
792-5341
50 M 1902 75 FP
ANDERSON, LYLE B. PO BOX 1285, 67530
793-8141
28 M 1902 60 FP
BEAHM, ANDL W. 3923 BROADWAY, 67530
793-7827
16 M 1902 43 FP
BEAHM, DONALD E. MED ARTS BLDG, 67530
792-3626
45 M 1902 71 OPH
BROWN, C REIFF. 1031 JACKSON, 67530
792-4391
31 M 3901 57 ORS
CAVANAUGH, CLAIR J. C K M C, 67530
792-2617
23 M 1803 47 R
DEGNER, JAMES B. 3515 BROADWAY, 67530
792-2617
31 M 1902 57 R
ELLEDGE, E FRED. 1017 C JACKSON, 67530
792-3678
38 M 1902 65 U
EVANS, WILLIAM R. 3923 BROADWAY, 67530
793-3574
25 M 1902 53 FP
FIESER, CARL W. 3515 BROADWAY, 67530
792-2617
45 M 1902 71 R
GATEND, JOSEPH. 1023 JACKSON SQUARE, 67530
793-3501
25 M 64901 50 OBG
HOLT, JOHN M. 2200 LAKIN, 67530
793-8429
35 M 1902 61 IM
JONES, EDWARD L. 3515 BROADWAY, 67530
792-2511
35 M 1902 61 PATH
KING, WILLIAM T. 3431 FOREST, 67530
793-3501
35 M 1902 61 OBG
KIRBY, MERLIN G. 1012 WASHINGTON, 67530
793-3091
31 M 1902 56 GS
KRUEGER, HAVEN C. 1023 JACKSON SQUARE, 67530
792-2163
32 M 1902 61 PD
MALIK, MUMTAZ ILAHI. 1031 JACKSON, 67530
792-4391
47 M 70401 70 ORS
MCALLASTER, WENDALE E. 2111 FOREST, 67530
793-3591
24 M 1902 54 GS
NIEDEREE, W CURTIS. 1012 WASHINGTON, 67530
793-3091
30 M 3006 56 GS
POLSON, ROBERT C. BOX A 1422 POLK ST, 67530
793-8414
17 M 1902 42 OPH
PRESTON, RICHARD. 2200 LAKIN, 67530
793-8426
42 M 1902 69 IM
REPLOGLE, CHARLES B. 2111 FOREST, 67530
793-3591
27 M 1902 53 FP
RUIZ, CARLOS M. 3107 TWELFTH, 67530
792-3210
25 M 27501 52 P
SAYLER, JEROME. CENTRAL KS MEDICAL CENTER, 67530
792-2511
20 M 4113 50 PATH
SCHUETZ, PERRY N. 1422 POLK BOX A, 67530
793-8414
45 M 1902 71 OPH

SCHUKMAN, JAY STEPHEN. 1400 POLK, 67530
792-5341
50 M 1902 75 FP
SHIVEL, DAVIO G. 3523 FOREST, 67530
793-3523
28 M 1902 55 FP
SWAN, MAJOR MARTIN. 3923 BROADWAY, 67530
792-4540
06 M 1902 43 IM
UNREIN, ROBERT J. 1017A JACKSON, 67530
792-2504
29 M 1902 58 FP
WHITE, CHARLES L. 2412 DOVE TERR RT 4, 67530
-
06 M 1902 36 OD
WIGGS, JAMES W. 1027 JACKSON, 67530
792-1336
36 M 1720 63 N

GREENSBURG—316
(Iroquois County Society)

BRADLEY, J RODERICK. 502 SOUTH WALNUT, 67054
723-2127
23 M 1902 47 FP
WALDOORF JR, MELVIN H. BRADLEY-WALDOORF CLINIC, 67054
723-2127
23 M 1902 47 FP

HALSTEAD—316
(Harvey County Society)

AILLON, ALEJANDRO J. HERTZLER CLINIC, 67056
835-2241
39 M 26402 63 TS
BAILEY, COLIN. HERTZLER CLINIC, 67056
835-2241
33 M 35205 59 GYN
BEUGELSDIJK, HENRY PETER. HERTZLER CLINIC, 67056
835-2241
49 M 1902 74 ANES
BOUDREAUX, VELTIN J. HERTZLER CLINIC, 67056
835-2241
37 M 4812 64 R
BURNETT, A DEAN. HERTZLER CLINIC, 67056
835-2241
21 M 1902 52 GS
DECKER, DONALD O. HERTZLER CLINIC, 67056
835-2241
31 M 1902 56 CO
EASTES, GARY DEAN. HERTZLER CLINIC, 67056
835-2241
44 M 4812 71 U
GNAU, FREDRIC B. 803 MAIN, 67056
835-2241
42 M 1902 68 OTO
HARMS, WILMER A. THE HERTZLER CLINIC, 67056
835-2241
22 M 1902 56 OPH
HILL, PHILLIP K. THE HERTZLER CLINIC, 67056
283-3600
29 M 1803 56 IM
HOLT, ROBERT G. 327 CHESTNUT, 67056
835-2241
22 M 5104 44 OPH
HOOFFER, WILFORD O. HERTZLER CLINIC, 67056
835-2241
30 M 1902 55 TS
MALONE, EUGENE M. HERTZLER CLINIC, 67056
835-2241
23 M 1902 56 IM
MARSH, CONNIE M. HERTZLER CLINIC, 67056
835-2241
47 F 1902 75 IM
MARSH, GENE E. HERTZLER CLINIC, 67056
835-2241
47 M 1902 73 GS
MONTGOMERY, LLOYD DAN. HERTZLER CLINIC, 67056
835-2241
43 M 3601 69 P
MONTGOMERYSHORT, RUTH G. HERTZLER CLINIC, 67056
835-2241
10 F 1902 37 ENT
MORTON, JOHN E. HERTZLER CLINIC, 67056
835-2241
99 M 35211 26 P
O'GRADY, JOSEPH A. HERTZLER CLINIC, 67056
835-2241
16 M 3545 41 IM
POKORNY, CHARLES. HERTZLER CLINIC, 67056
835-2241
08 M 2834 34 PUO

PRENTISS, HARDLD, 4TH AND CHESTNUT, 67056
 835-2241
 36 M 1720 62 R
 RATE, ROBERT G, HERTZLER CLINIC, 67056
 835-2241
 14 M 1803 39 TS
 RIZZA, ROBERT G, RT #2, 67056
 -
 30 M 1201 56 PD
 RDACH, NEIL E, HERTZLER CLINIC, 67056
 835-2241
 38 M 1902 67 CP
 SHAH, SHARFUDDIN, HERTZLER CLINIC, 67056
 835-2241
 31 M 70401 58 IM
 STOFFER, ROBERT P, HERTZLER CLINIC, 67056
 835-2241
 26 M 1902 48 IM
 TAN, POLY, HERTZLER CLINIC, 67056
 835-2241
 44 M 3901 69 P
 TEJANO, NEDNILO A, HERTZLER CLINIC, 67056
 835-2241
 43 M 74808 67 DRS
 VRANEY, GEORGE, HERTZLER CLINIC, 67056
 835-2241
 43 M 5606 69 IM
 WELCH, JACK W, HERTZLER CLINIC, 67056
 835-2241
 18 M 1902 51 GS
 WILSON, H RANODLPH, HERTZLER CLINIC, 67056
 835-2241
 20 M 4112 45 GYN

HANOVER—913
(Northeast Kansas Society)

WARREN, ROGER O, BOX 38, 66945
 337-2214
 31 M 1902 57 GS

HARPER—316
(Tri-County Society)

BELLAR, RALPH E, 1019 CENTRAL, 67058
 896-3131
 31 M 3005 60 FP
 FORREO JR, WALTER A, 121 E MAIN, 67058
 -
 43 M
 GARONER, BILLIE L, 121 E MAIN, 67058
 896-3661
 25 M 1902 57 FP

HAVEN—316
(Reno County Society)

HAINES, CHESTER W, 102 SUNSET LANE, 67543
 -
 01 M 1606 28 DO

HAYS—913
(Central Kansas Society)

ALLEN, JAMES E, 2707 VINE #6, 67601
 628-3261
 46 M 1902 72 IM
 APPLGATE JR, FRANCIS R, 1010 DOWNING, 67601
 628-8218
 30 M 1902 55 OPH
 ARTMAN, JOHN C, 2005 LINCOLN DRIVE, 67601
 625-2518
 24 M 2002 48 ANES
 BULA, RALPH E, 2707 WALNUT, 67601
 -
 12 M 1902 37 DO
 CARLSON, EARL V, 2818 N VINE ST, 67601
 628-8221
 31 M 3005 56 ORS
 CECIL III, JOHN, BOX 833, 67601
 625-6521
 43 M 4804 69 R
 COOY, DOROTHY, 2704 WOODROW CT, 67601
 628-4000
 29 F 3607 53 P
 COOY, JOHN, 2704 WOODROW CT, 67601
 625-8251
 25 M 401 60 P

CDX, ROBERT H, 2507 CANTERBURY RD, 67601
 625-2551
 43 M 1902 70 PD
 CRAMM, RUSSELL E, 3004 BRADWAY, 67601
 625-2518
 30 M 1902 56 GS
 EOOY, VICTOR M, 105 W 13TH, 67601
 625-2551
 29 M 1902 55 GS
 ENBERG, ROBERT, 2507 CANTERBURY, 67601
 625-2551
 43 M 1902 69 PD
 FLANDERS, H ALDEN, 201 EAST 7TH, 67601
 628-8251
 23 M 1902 44 IM
 HAIGLER, JAMES P, 234 WEST 11TH, 67601
 625-2537
 13 M 3006 39 FP
 HALLING, L WILLIAM, 1300 EAST 13TH, 67601
 625-5646
 27 M 5002 57 PATH
 HANSA, HANSA, 2503 CANTERBURY, 67601
 625-2551
 45 M 89101 69 DBG
 HULL, NORMAN E, 111 W 10TH, 67601
 625-2518
 24 M 1902 52 FP
 HUTCHISON, GLEN C, 3200 COUNTRY LANE, 67601
 628-8251
 21 M 1902 50 ANES
 KANE JR, WILLIAM M, CANTERBURY'S CLINIC PA, 67601
 628-3245
 27 M 1001 54 DBG
 KIFER, C JAMES, BOX 813, 67601
 625-6521
 45 M 1902 71 OR
 LASLEY, MICHAEL B, 2707 VINE SUITE 7, 67601
 628-3217
 45 M 1902 71 GS
 MATTICK, IRVIN H, 2818 N VINE, 67601
 628-8221
 18 M 2802 43 DRS
 MEDINA, ANIBAL, 2707 VINE, 67601
 628-1019
 34 M 45101 62 U
 MYRICK, MICKEY, 111 WEST 10TH, 67601
 625-2518
 42 M 3005 74 FP
 NEIL, ROY NEWTON, PO BOX 1019, 67601
 628-3215
 38 M 3005 65 PATH
 NEWCOMB, WARD M, 1300 E 13TH, 67601
 625-5646
 47 M 3005 71 PATH
 RAJEWSKI, RICHARD L, 2501 CANTERBURY, 67601
 -
 M
 REYNOLDS, JEFFREY C, 2517 CANTERBURY RD, 67601
 625-7311
 39 M 1902 64 ENT
 REYNOLDS, LLOYD W, 2110 ASH, 67601
 -
 10 M 3840 34 DO
 SILER, EUGENE T, 1010 DOWNING, 67601
 628-8218
 24 M 1902 52 DO
 STUMP, HARL G, 3208 WILLOW ST, 67601
 628-2826
 39 M 1902 65 GS
 THADA, NARDNGSAK K, 1201 FORT, 67601
 625-2551
 44 M 89101 69 IM
 WATTS, HARRY E, 1010 DOWNING AVE, 67601
 628-8218
 27 M 702 54 OPH
 WEBER, WALLACE V, 2707 VINE SUITE 10, 67601
 628-3231
 43 M 1902 69 D
 WENZEL, ANNA MARIE, 204 W 17TH, 67601
 -
 95 F 1902 23 DO
 WIEGMAN, HUGH ALAN, BOX 833, 67601
 628-1808
 34 M 1803 60 OPH
 WILCOX JR, HOWARD L, PO DRAWER 430, 67601
 628-8221
 44 M 1902 70 ORS

HAYSVILLE—316
(Sedgwick County Society)

MORGAN, NOVA L, 301 W GRAND, 67060
 524-3275
 20 M 3901 50 FP

HERINGTON—913*(Dickinson County Society)*

DOZIER, FRED S, 1005 NORTH B STREET, 67449
258-2215
10 M 4804 34 FP

HESSTON—316*(Harvey County Society)*

DIENER, CLAYTON H, PO BOX 386, 67062
327-4122
18 M 1902 54 G5
FRIESEN, FLORENCE V, SHOWALTER VILLA, 67062
-
87 F 1611 14 00
YODER, VERNON E, ROUTE #1, 67062
283-2400
31 M 4802 61 P

HIAWATHA—913*(Northeast Kansas Society)*

DUCKETT, THOMAS G, 201 MIAMI, 66434
742-2161
10 M 1902 34 FP
LARSON, DELBERT L, 314 OREGON, 66434
742-2161
30 M 1803 64 FP
MEIDINGER, RAY, 111 S FOURTH, 66434
742-2135
03 M 3005 32 FP
SINNING, GARY, 314 OREGON, 66434
742-2161
49 M 1902 74 FP

HIGHLAND—913*(Northeast Kansas Society)*

CORDER, ROBERT L, 66035
442-3341
23 M 1902 49 FP

HILL CITY—913*(Northwest Kansas Society)*

REDDY, B N, 304 WEST PROUT, 67642
674-2255
3B M 49557 66 PO
REDDY, P JAGANNADHA, 80 WALNUT DRIVE, 67642
674-2255
42 M 49511 66 G5

HILLSBORO—316*(Marion County Society)*

ENS, GERHARD GEORGE, 613 SOUTH MAIN, 67063
947-5931
20 M 1902 55 FP
ENS, PETER, 209 SOUTH MAIN, 67063
947-3671
14 M 1902 51 FP
FRANZ, ROBERT G, 704 S MAIN, 67063
947-3197
33 M 3901 59 FP
JANZEN, HERMAN F, 128 S MAIN, 67063
-
91 M 1902 35 GP
LOEWEN, PETER S, SKILLED NURSING UNIT, 67063
-
91 M 1902 30 00

HOISINGTON—316*(Barton County Society)*

MOORE, ROBERT, 814 NORTH ELM, 67544
653-2151
22 M 3901 53 FP
WOLFENBARGER, KEITH A, 351 WEST 10TH, 67544
653-4145
27 M 1902 58 FP

HOLTON—913*(Jackson County Society)*

MOSER, ERNEST C, 43B HILLCREST DR, 66436
-
09 M 1902 34 00
MOSER, M ROSS, 41B WEST FIFTH, 66436
364-3116
19 M 1902 47 FP

MOSER, ROY H, 801 IOWA, 66436
-

04 M 1902 32 00
SEELEY, JAMES C, 418 WEST 5TH, 66436
364-3116
34 M 1902 64 FP

HORTON—913*(Northeast Kansas Society)*

FRANCISCO, EDGARDO, PO BOX 6, 66439
-
39 M
WOOD, ROBERT D, 105 W 8TH, 66439
486-2127
26 M 1902 53 FP

HOWARD—316*(Southeast Kansas Society)*

ENRIQUEZ, ROMAN, 114 E WASHINGTON, 67349
374-2521
48 M 74801 72 1M

HOXIE—913*(Northwest Kansas Society)*

NEUENSCHWANDER, JOHN, 700 MAIN, 67740
675-3292
26 M 2802 51 FP
NEUENSCHWANDER, JOHN RAND, 700 MAIN, 67740
675-3292
47 M 1902 72 FP

HUGOTON—316*(Seward County Society)*

FREDERICK, M F, 1006 S JACKSON, 67951
544-2784
20 M 1902 44 FP
LENEVE, ROBERT T, 1006 S JACKSON, 67951
544-2784
21 M 3901 46 FP

HUMBOLDT—316*(Southeast Kansas Society)*

LONG, EDWARD E, 8TH & NEW YORK, 66748
473-2411
21 M 1902 50 FP

HUTCHINSON—316*(Reno County Society)*

ADAMS JR, MARCUS W, 2101 N WALDRON, 67501
663-6121
33 M 3901 59 PO
ALBRIGHT, JEROLO O, 2101 N WALDRON, 67501
663-6121
39 M 1902 66 FP
ANDERSON, DAVID G, 1100 N MAIN, 67501
669-0191
35 M 1602 61 OR5
ANTLINGER, THOMAS J, BOX 1606, 67501
663-6811
42 M 5606 67 R
BAUER, THOMAS A, 2101 N WALDRON, 67501
663-6121
41 M 1902 67 1M
BLANK, JOHN N, WOLCOTT BLOG, 67501
663-4271
07 M 1902 38 FP
BORRA, MARIO J, 1 WEST 8TH, 67501
662-1751
24 M 2401 47 U
BOS, NORMAN C, 2101 N WALDRON, 67501
663-4406
24 M 1611 47 OR5
BURGER, J DALE, 2101 N WALDRON, 67501
663-6121
21 M 1902 46 FP
CASADY, GILBERT N, 39 LINKSLAND DR, 67501
663-3657
23 M 1902 53 ANES
CASEY, JAMES, 2101 N WALDRON, 67501
663-6121
42 M 3005 69 PO
CHEN, JOHN S, 215 COUNTRYSIDE DRIVE, 67501
662-4427
33 M 24216 56 ANES

CHERVEN, PHILIP L. 1100 N MAIN.67501
662-3364
45 M 2501 71 PD
CRAWFORD, ROBERT A. 2101 N WALDRON.67501
663-6121
16 M 1601 42 FP
DEPENBUSCH, FRANCIS L. 512 WOLCOTT BLDG.67501
663-7187
38 M 1902 65 OPH
ECKART, DE MERLE E. 312 WOLCOTT BLDG.67501
662-4921
14 M 1902 40 P
FALTER, RICHARD T. 512 WOLCOTT BLDG.67501
663-7187
38 M 1902 67 OPH
FERNIE, ROBERT W. 1100 N MAIN.67501
663-1136
06 M 702 34 IM
FOSS, DANIEL C. 2101 N WALDRON.67501
663-6121
43 M 1902 69 GE
GOODPASTURE, WILLARD C. 2101 N WALDRON.67501
663-6121
10 M 1602 36 OO
HEDRICK, KENNETH E. 2101 N WALDRON.67501
663-6121
27 M 1902 53 GS
HILL, JOHN J. 519 WILEY BLDG.67501
662-1291
16 M 1902 44 OTC
HINSHAW JR, CHARLES T. 720 N MAIN.67501
662-7802
32 M 1902 58 PATH
HOLDERMAN, WALLACE D. 2101 N WALDRON.67501
663-4406
28 M 1902 54 ORS
JARROTT, JOHN B. 1100 N MAIN.67501
669-0191
16 M 1902 40 ORS
LETTNER, HANS T. 720 N MAIN.67501
662-7801
23 M 40716 49 PATH
LUKENS, DAVID, 1100 N MAIN.67501
663-1136
24 M 2307 48 IM
MCCOY, CHARLES T. 310 WOLCOTT BLDG.67501
662-0121
16 M 1902 41 OPH
MCMULLEN, JOSEPH E. 2101 N WALDRON.67501
663-6121
33 M 1902 62 GS
MULL, JOHN C. 2101 N WALDRON.67501
663-6121
34 M 1902 61 OBG
NEEL, WILBUR B. 2101 N WALDRON.67501
663-6121
24 M 1902 59 IM
NEUSCHAFER, DARREL R. 2101 N WALDRON.67501
663-6121
48 M 1902 74 OBG
NUNEMAKER, MARION E. 919 N MAIN.67501
662-5391
21 M 1902 46 ANES
OPENSHAW, CALVIN R. 1100 N MAIN.67501
662-3305
21 M 4901 44 GS
PAINE, GEORGE E. 220 W 23RD.67501
-
94 M 1606 19 OO
PEASE, GARY L. 521 WILEY BLDG.67501
662-4458
41 M 3005 67 OTO
PERKINS, JACK L. 2101 N WALDRON.67501
663-6121
24 M 1902 53 FP
SCHROLL, JACK C. 2101 N WALDRON.67501
663-6121
24 M 1902 49 OBG
SHAW JR, JAMES W. 720 N MAIN.67501
662-7801
40 M 1902 65 PATH
SHEARS, ROBERT N. 1100 N MAIN.67501
662-3364
20 M 1902 44 PD
STAFFORD, ROBERT W. 2101 N WALDRON.67501
663-6121
43 M 2101 69 IM
STENSAAS, CARL O. 401 WOLCOTT BLDG.67501
663-9147
10 M 1902 38 D
STOUT, JAMES M. 2101 N WALDRON.67501
663-6121
29 M 1902 55 FP

SUMNER, JOYCE R. 2027 N MADISON.67501
663-0822
26 F 1902 51 ANES
SUMNER, MARION M. 2027 N MADISON.67501
663-6121
26 M 1902 52 IM
TAYLOR, ELWYN J. 6500 N PLUM.67501
663-1251
34 M 1902 61 FP
TWEITO, DAVID H. 1100 N MAIN.67501
662-3364
38 M 1803 64 PD
VON RUDEN, WILLIAM J. 2100 N WALDRON.67501
662-3306
26 M 1611 52 GS
WEIDENSAUL, DAVID N. 2101 N WALDRON.67501
663-6121
50 M 1M
WILLIAMSON, JOHN. 1100 N MAIN.67501
669-0191
35 M 2501 60 ORS
WOLFE, JOHN E. 2101 N WALDRON.67501
663-6121
42 M 1902 68 IM
WORTMAN, JACK A. 2101 N WALDRON.67501
663-6121
34 M 1902 62 IM

INDEPENDENCE—316 (Southeast Kansas Society)

BAIR, ALBERT E. PO BOX 925.67301
-
16 M 1902 44 GS
BARBERA, PORTER E. 800 WEST CHESTNUT.67301
331-4400
19 M 4707 46 FP
BEAHM, EDGAR H. 307 PROFESSIONAL BLDG.67301
331-2311
13 M 1902 44 FP
BULLOCK, HAROLD O. PO BOX 746.67301
331-5550
06 M 1902 33 IM
CHAPPUIE, WILLIAM G. 800 CHESTNUT WEST.67301
331-5440
24 M 1902 51 FP
EMMOT, WILLIAM W. 800 WEST CHESTNUT.67301
331-6350
45 M 1902 71 IM
EMPSON, CHARLES L. 400 N 14TH.67301
331-6019
37 M 1902 68 FP
GAREY, WILLIAM JOHN. MERCY HOSPITAL.67301
331-2200
44 M 6501 DR
KNUTH, KENNETH L. MERCY HOSPITAL.67301
331-2200
22 M 1902 50 R
MYERS JR, EARL B. PO BOX 528.67301
331-3420
32 M 2803 64 GS
OSBORN, ROBERT M. 800 W CHESTNUT.67301
-
M
ROBINSON, EDGAR L. 209 NORTH 6TH.67301
331-1450
15 M 1902 42 FP
SHEIKH, MASOOD A. 900 W MYRTLE.67301
331-2803
44 M 70402 66 GS
STRAHM, WAYMER J. RT 1.67301
331-1748
29 M 1902 62 P

IOLA—316 (Allen County Society)

COPENING, TELL B. 826 E MADISON.66749
365-2131
43 M 1902 69 FP
DETAR, GEORGE F. 219 W MADISON.66749
365-3712
28 M 1902 57 GS
DICK, WILLIS G. BOX 626.66749
365-2131
13 M 512 41 GS
HANSON, DAVID C. 826 E MADISON.66749
365-2131
46 M 512 73 FP
LENSKI JR, FRANCIS X. 206 S JEFFERSON.66749
365-3901
26 M 1606 49 FP

MYERS, W EUGENE, 211 S STREET,66749
 365-3732
 12 M 1902 46 FP
 PEES, GERALD B, 219 W MADISON,66749
 365-5175
 15 M 1902 43 GS
 SCHMAUS, LYLE F, 202 E STREET,66749
 -
 99 M 1803 26 00

JETMORE—316
(Ford County Society)

O'SHEA, JAMES G, BOX 545,67854
 357-8321
 18 M 3901 48 FP

JEWELL—913
(Mitchell County Society)

PLOWMAN, CARL W, ,66949
 428-3511
 99 M 1606 26 00

JUNCTION CITY—913
(Geary County Society)

BOLLMAN, CHARLES S, PO BOX 397,66441
 762-4575
 41 M 3901 66 GS
 BRETHOUR, LESLIE J, PO BOX 49,66441
 238-4151
 13 M 3006 39 FP
 BUNKER JR, HERBERT L, 1106 ST MARYS RD,66441
 238-5131
 20 W 1606 45 FP
 COPELAND, GARY A, GEARY COMMUNITY HOSP,66441
 762-2387
 42 M 1902 08 R
 LABHSETWAR, S A, MEDICAL ARTS BLDG,66441
 762-4147
 39 F 49528 64 OBG
 MACE, RONALD D, PO BOX 163,66441
 762-4884
 42 M 3901 74 FP
 MINNICK, CHARLES V, 602 NORTH JEFFERSON,66441
 762-2051
 08 M 2105 35 FP
 O'DONNELL, HARRY E, 1106 ST MARYS RD,66441
 762-4947
 14 M 4113 42 FP
 SCOTT, ALFX, 507 WEST 6TH,66441
 238-2518
 23 M 5605 48 FP
 WRIGHT, STANLEY E, 1106 ST MARYS RD,66441
 762-4884
 47 M 3901 74 FP

KANSAS CITY, KANSAS—913
(Wyandotte County Society)

AHOOU, NABIH I, KU MEDICAL CENTER,66103
 588-6586
 34 M 33002 58 A
 ALEXANDER, CHARLES E, 600 NEBRASKA,66101
 321-6670
 43 M 401 70 OBG
 ALEXANDER, CLYDE W, 1514 NORTH STH,66101
 281-4380
 96 M 4707 23 FP
 ALGIF, WILLIAM H, 907 N 7TH,66101
 371-5079
 02 W 1902 27 1M
 ALLEN, MAX S, K U MED CENTER,66103
 588-6988
 11 M 1902 17 1M
 ALLEN, WILLIAM R, 9201 PARALLEL PARKWAY,66112
 334-4110
 22 M 1902 46 P
 AMARE, MAMMO, KUMC,66103
 588-6011
 36 M 60501 61 1M
 ARAKAWA, KASUMI, KU MEDICAL CENTER,66103
 588-6670
 26 M 57211 53 ANES

ARENAL, ANGELA C, BETHANY HOSPITAL,66102
 281-8400
 38 F 35204 60 ANES
 ARVANITAKIS, CONSTANTINE, K U MED CENTER,66103
 588-6990
 39 M 41802 65 1M
 ARVANITAKIS, SANDA, KUMC,66103
 588-6323
 39 F 41802 64 PD
 ASHER, MARC A, K U MED CENTER,66103
 588-6130
 36 M 1902 62 ORS
 ATKINS JR, ELOYD L, K U MED CENTER,66103
 588-6015
 43 M 5104 69 CO
 BARNHORST, DONALD A, KUMC,66103
 588-6107
 37 M 2834 63 COS
 BASS JR, LEWIS N, 1975 N STH,66101
 321-2320
 21 W 1902 45 PD
 BATNITZKY, SOLOMON, K U MED CENTER,66103
 588-6835
 40 M 83601 64 DR
 BECKER, LESLIE E, 600 NEBRASKA,66101
 342-4010
 23 M 1003 46 U
 BELT, ROBERT JULIAN, K U MED CENTER,66103
 588-6029
 45 M 702 71 MD
 BERGIN, JAMES J, BETHANY MED CENTER,66102
 281-8767
 28 M 2407 54 1M
 BEST, JOHN E, K U MED CENTER BOX 370,66103
 -
 51 M 2803 77 1M
 BICHLMEIER, FRANKLIN G, 155 S 18TH,66102
 371-6800
 33 M 1902 58 COS
 BIGONGIARI, LAWRENCE R, KU MED CENTER,66103
 588-6800
 44 M 1611 69 DR
 BILLINGSLEY, THAO H, 155 S 18TH,66102
 321-3844
 41 M 1902 66 P
 BOGGAN, MICHAEL D, 155 S 18TH,66102
 371-6800
 40 M 1201 67 COS
 BOLINGER, ROBERT E, KU MEDICAL CENTER,66103
 588-6022
 19 M 1902 43 END
 BOLTON, VICTOR E, 155 SOUTH 18TH,66102
 371-2020
 24 M 1902 48 ORG
 BOSILEVAC, FRED N, 155 S 18TH,66102
 342-4843
 16 M 1902 44 OPH
 BOSWELL, H CRAIG, KU MEDICAL CENTER,66103
 588-6670
 47 M 1803 73 ANES
 BRACKETT JR, CHARLES F, KU MED CENTER,66103
 588-6117
 20 M 3501 44 NS
 BRILLHART, MAXINE I, 1610 WASHINGTON BOULEVARD,66102
 321-4800
 15 F 1902 50 FP
 BROOKS, WILLIAM HENRY, 155 S 18TH,66102
 371-4343
 49 M 1902 74 R
 BUBB, STEPHEN K, 155 S 18TH,66102
 371-6802
 48 M 1902 74 ORS
 BURGER, WILLIAM E, 355 NEW BROTHERHOOD BLDG,66101
 371-1017
 21 M 3006 51 GS
 CALDERON, JAIME, 4631 ORVILLE,66102
 596-1185
 39 W 26401 66 1M
 CAMERON, WILLIAM J, KU MEDICAL CENTER,66103
 588-6200
 29 M 2501 54 OBG
 CARPENTER, PAUL R, 155 SOUTH 18TH,66102
 371-6800
 24 M 1902 50 TS
 CASTEEL, CHARLES K, 155 SOUTH 18TH,66102
 342-7233
 34 M 3901 59 U
 CHALIAN, ALEXANDER R, 2648 MINNESOTA AVENUE,66102
 -
 03 M 3509 37 00
 CHANG, CHAE H, KU MED CENTER,66103
 588-6807
 29 M 58301 53 R

CHIN, TOM O, KUMC - HUMAN ECOLOGY DEPT, 66103

588-7175

22 M 2501 43 10

CHO, CHENG T, K U MED CENTER, 66103

588-6302

37 M 38501 62 PO

CHONKO, ARNOLD M, KU MED CENTER, 66103

588-6969

43 M 3840 69 NEP

CHRISTIAN, STANLEY J, 1003 CENTRAL AVE, 66102

371-1181

18 M 1902 44 FP

CHUN, CHUNG S, K U MED CENTER, 66103

588-6324

30 F 58301 53 PO

COALE, LLOYD H, 5020 GREELEY, 66104

-

13 M 1902 43 00

COHN, STEVEN G, PROVIDENCE-ST MGT HLTH CT, 66112

334-2500

41 M 1902 67 ANES

COOK, BRUCE A, K U MED CENTER, 66103

-

49 M 1902

COOK, JAMES O, KU MED CENTER, 66103

588-6031

36 M 6505 60 HEM

COOKE, ALLAN R, KUMC DEPT OF MED, 66103

588-6990

36 M 14303 58 GE

COOPER, LEO F, K U MED CENTER, 66103

588-6522

15 M 1902 53 FP

COX III, IRA L, 155 SOUTH 18TH, 66102

371-4343

43 M 1902 68 OR

COX JR, WALLACE F, 4631 ORVILLE, 66102

287-3600

30 M 1902 56 GS

CRIST, ROBERT O, KUMC, 66103

588-6200

36 M 1902 63 OBG

CROCKETT, CHARLES A, 155 S 18TH, 66102

342-2200

19 M 401 44 OPH

CULP, LOUIS M, 1645 WASHINGTON BLVD, 66102

371-1077

24 M 1902 53 FP

DARR, RICHARD B, 147 APACHE TRAIL W, 66106

676-2214

42 M 3401 70 IM

DAVIS, CHRISTOPHER G, 219 HURON BLDG, 66101

321-9313

09 M 1902 39 FP

DAY, HUGHES W, BFTHANY MED CENTER, 66102

281-8856

15 M 1902 39 IM

DE SMET, ARTHUR AUGUST, KU MED CENTER - OIAG RAD, 66103

588-6800

47 M 2501 72 OR

DEITZ, MICHAEL R, 155 S 18TH, 66102

342-2222

32 M 4101 58 OPH

DEMOTT, WAYNE R, PROVIDENCE-ST MGT HLTH CT, 66112

334-2500

34 M 4002 59 PATH

DIALLO, GASTON I, 600 NEBRASKA, 66117

281-2888

35 M 86905 64 GE

DICK, ARTHUR R, KUMC, 66103

588-6985

34 M 2301 65 N

DIEDERICH, DENNIS A, K U MEDICAL CENTER, 66103

588-6981

36 M 2834 61 IM

DONNELLY, FRANCIS M, PROVIDENCE-ST MGT HLTH CT, 66112

334-2500

48 M 1902 74 ANES

DUJOVNE, CARLOS A, K U MED CENTER, 66103

588-6026

37 M 13201 61 CP

DUNN, MARVIN I, KU MED CENTER, 66103

588-6015

27 M 1902 54 CO

EGEA, FERNANDO M, 8919 PARALLEL PARKWAY, 66112

334-3400

37 M 13206 62 N

FABIAN, CAROL J, K U MED CENTER, 66103

588-6029

46 F 1902 0NC

FITZPATRICK, M ROBERT, 1610 WASHINGTON BLVD, 66102

321-4800

20 M 1803 44 FP

FIXLEY, MARK S, K U MED CENTER, 66103

588-6044

45 M 1902 72 PUO

FLOERSCH, HUBERT M, 155 S 18TH, 66102

371-2020

08 M 1902 35 OBG

FORET, JOHN O, KU MED CENTER, 66103

588-6147

26 M 1602 53 U

FOX, DEANNA K, K U MED CENTER, 66103

588-6670

48 F 1902 74 ANES

FOX, HOWARD A, K U MED CENTER, 66103

588-6337

33 M 3501 62 PO

FRANCISCO, W DAVID, 155 S 18TH, 66102

371-6802

21 M 1902 44 OR5

FRIESEN, STANLEY R, KU MED CENTER, 66103

588-6108

18 M 1902 43 GS

FUNK, EDWARD O, BFTHANY HOSP, 66102

281-8400

04 M 1902 41 ANES

GALLFUGH, KEITH W, 155 S 18TH, 66102

371-4343

32 M 1902 57 R

GILHOUSEN, FREDERIC M, 1029 N 32ND, 66102

281-5252

40 M 1902 66 OR5

GILMORE, CLARENCE A, 600 NEBRASKA, 66101

321-6670

31 M 4707 60 OBG

GOOFREY, WILLIAM A, KUMC, 66103

588-6600

38 M 1902 65 OPH

GOERTZ, LEO R, 155 S 18TH ST, 66102

371-4343

22 M 1902 52 R

GOODWIN, DONALD W, KUMC, 66103

588-6402

31 M 1902 64 P

GOTO, HIROSHI, KUMC - ANFS DEPT, 66103

588-6670

42 M 57241 67 ANES

GRADY, KENNETH L, 155 S 18TH, 66102

321-3844

36 M 1902 69 P

GRANTHAM, JARED J, K U MED CENTER, 66103

588-6983

36 M 1902 62 NEP

GREENBERGER, N J, KUMC, 66103

588-6001

33 M 3806 59 IM

GRIPKEY, CLARENCE A, 707 NORTH 75TH, 66112

-

05 M 1902 30 00

GRUENDEL, RICHARD A, 1029 N 32ND, 66102

281-5252

29 M 1902 55 OR5

GRUFNDEL, VIRGINIA T, 6926 GARFIELD, 66102

299-2787

30 F 1902 55 FP

HAAS, CHARLES O, K U MED CENTER, 66103

588-6029

39 M 1902 68 IM

HABERSANG, ROLF W O, KU MED CENTER-PED DEPT, 66103

588-6324

41 M 86901 70 PO

HANDCOCK, ALAN C, 9201 PARALLEL, 66112

299-1474

35 M 1902 65 FP

HARA, GLENN S, KU MED CENTER, 66103

588-6200

43 M 502 69 OBG

HARBIN, GARY LYNN, KY MED CENTER-ORTHO SURG, 66103

588-6198

50 M 1902 75 OR5

HARDIN, CREIGHTON A, KU MED CENTER, 66103

588-6106

18 M 5605 43 GS

HARTMAN, CHARLES R, K U MED CENTER, 66103

588-6111

37 M 1902 66 IM

HARTMAN, GERALD V, KUMC, 66103

588-6815

20 M 1902 45 TR

HENNING JR, HAROLD JOHN, 5313 FIFTH COURT, 66104

-

55 M 1902

HERMRECK, ARLO S, K U MED CENTER, 66103

588-7232

38 M 1902 65 GS

HIEBERT, PETER E, 155 S 18TH, 67056
 371-4343
 03 M 1902 34 R
 HINTHORN, DANIEL R, KUMC, 66103
 588-6035
 41 M 1902 67 1M
 HITCHCOCK, C THOMAS, 155 S 18TH SUITE 200, 66102
 371-2900
 M 1902 78 G5
 HODGES, GLENN R, K U MED CENTER, 66103
 588-6035
 41 M 1602 67 1D
 HOLDCRAFT, JACQUELYNE, 255 NEW BROTHERHOOD BLDG, 66101
 321-1161
 36 F 2105 63 ENT
 HOLLEMAN JR, JAMES F, D.O., 667 S 55TH ST, 66106
 287-1414
 38 M 2878 68 FP
 HOLMES, FREDERICK F, KUMC, 66103
 588-6987
 32 M 5404 57 1M
 HOLMES, GRACE E, KUMC, 66103
 588-6325
 32 F 5404 57 PO
 HODGSTRATEN, BARTH, K U MED CENTER, 66103
 588-6029
 24 M 66001 55 ON
 HORTON, WILLIAM A, K U MEDICAL CENTER, 66103
 588-6043
 45 M 1902 71 1M
 HUOSON, ROBERT P, K U MED CENTER, 66103
 588-7040
 26 M 1902 52 1M
 HUERTER, QUENTIN C, WYANDOTTE MED BLDG STE 226, 66112
 299-8800
 31 M 1902 59 OPH
 HUFF, JOHN D, 1428 S 32ND, 66106
 384-1630
 21 M 1902 52 FP
 HUGHES, JOHN JAY, 155 S 18TH STE 101, 66102
 371-4343
 46 M 3509 71 OR
 *HUNT, MARTHA E EXEC S, 38 S 18TH, 66102
 321-9460
 F
 HURWITZ, ARYEH, KU MED CENTER, 66103
 588-6026
 36 M 2802 61 1M
 IBARRA, RICHARD C, 754 PACIFIC, 66101
 342-3969
 26 M 64902 57 FP
 INGRAM, JOHN E, 1428 S 32ND, 66106
 384-1630
 24 M 3006 56 FP
 INNES, ROBERT C, PROVIDENCE-ST MGT HLTH CT, 66112
 334-2500
 25 M 2802 49 R
 JACOBS, DAVID S, 8929 PARALLEL PARKWAY, 66112
 334-2500
 31 M 2501 56 PATH
 JACOBSON, RAE R, K U MED CENTER, 66103
 588-6504
 36 M 3506 62 ORS
 JAHANIAN, DARYDUSH, 155 S 18TH, 66102
 371-2020
 40 M 51701 64 DBG
 JEFFRIES, RHDNA DETERT, 436 STATE AVE, 66101
 321-3055
 51 F 1902 75 PD
 JEWELL, WILLIAM R, KU MED CENTER, 66103
 588-6112
 35 M 1611 61 G5
 JOHNSON, JOHN E, BETHANY MED CTR, 66102
 281-8815
 17 M 4706 43 PATH
 JONES JR, HERMAN H, 600 NEBRASKA, 66101
 342-4010
 25 M 4707 54 G5
 KALIVAS, JAMES T, KU MED CENTER, 66103
 588-6028
 38 M 502 63 O
 KENNEDY, JAMES A, K U MED CENTER, 66103
 588-6000
 35 M 2834 61 1M
 KEPES, JOHN J, K U MED CENTER - PATH DEP, 66103
 588-7076
 28 M 47301 52 PATH
 KERBY, GERALD R, KU MED CENTER, 66103
 588-6044
 32 M 1902 58 PUD
 KESTENBAUM, THELOA M, K U MED CENTER, 66103
 588-6028
 48 F 5101 73 O
 KIM, JONG M, KUMC, 66103
 588-6670
 40 M 58302 64 ANES
 KING, CHARLES R, K U MEDICAL CENTER, 66103
 588-6200
 47 M 1902 71 DBG
 KIRCHMER, NANCY, KU MED CENTER, 66103
 588-6800
 44 F 4802 73 PDR
 KIRCHNER, FERNANDO R, KUMC, 66103
 588-6700
 30 M 64901 55 DTO
 KODANAZ, A AYTEKIN, 8929 PARALLEL, 66112
 334-2500
 28 M 90201 55 ANES
 KRANTZ, KERMIT E, KU MED CENTER, 66103
 588-6201
 23 M 1606 48 DBG
 KUBIN, OORIS A, 155 S 18TH, 66102
 371-4343
 15 F 1902 43 R
 KWEE, SIOE T, PROVIDENCE-ST MGT HLTH CT, 66112
 334-2500
 36 F 1720 63 PATH
 KYNER, JOSEPH L, KU MED CENTER, 66103
 588-5554
 34 M 1902 60 END
 LAING, ROBERT R, 155 S 18TH ST, 66102
 371-4301
 37 M 1643 61 GE
 LANSKY, LESTER L, K U MED CENTER, 66103
 588-6300
 33 M 2604 65 CHN
 LANSKY, SHIRLEY B, K U MED CENTER, 66103
 588-6400
 35 F 2604 60 CHP
 LAYBURN JR, PAUL C, KU MED CENTER, 66103
 588-6475
 19 M 3509 44 CHP
 LEAKE III, HUNTER C, K U MED CENTER - PED DEPT, 66103
 956-1100
 37 M 2105 63 PD
 LEE, JAE M, 4631 ORVILLE - SUITE 109, 66102
 677-3555
 40 M 58302 65 G5
 LEE, KYD R, KUMC, 66103
 588-6800
 33 M 58302 59 R
 LEE JR, JAMES G, 155 S 18TH, 66102
 371-2330
 18 M 1902 44 DBG
 LEMOINE JR, ALBERT N, K U MED CENTER, 66103
 588-6600
 18 M 2802 43 OPH
 LEO, WILLIAM A, K U MED CENTER, 66103
 588-6109
 22 M 1902 48 G5
 LEVINE, ERROL, K U MED CENTER, 66103
 588-6800
 41 M 83601 64 OR
 LINDSLEY, CAROL B, K U MED CENTER, 66103
 588-5907
 41 F 5404 68 PDRH
 LINDSLEY, HERBERT B, K U MED CENTER, 66103
 588-6008
 40 M 1902 66 RHU
 LINSRAW, MICHAEL A, K U MED CENTER, 66103
 588-6300
 40 M 4109 66 PO
 LIU, CHIEN, K U MED CENTER, 66103
 588-6035
 21 M 24217 47 1D
 LLOYD, HARVEY L, 3200 STRONG AVE, 66106
 831-1111
 08 M 1503 36 FP
 LOTITO, CARLOS A, 4631 ORVILLE, 66102
 596-1185
 29 M 13201 56 1M
 LOWMAN, JAMES T, KUMC, 66103
 588-5701
 31 M 401 58 PO
 LUKERT, BARBARA P, KU MED CENTER, 66103
 588-5554
 34 F 1902 60 END
 LYNCH, SEAN R, KU MED CENTER, 66103
 588-6031
 38 M 83601 61 HEM
 MACARTHUR, RICHARD IAN, KUMC 39TH AT RAINBOW, 66103
 588-6100
 46 M 1902 73 G5
 MAKLAO, M NABIL, K U MED CENTER - RAD DEPT, 66103
 588-6886
 38 M 33003 61 R

MANI, MANI M. KUMC.66103
588-6136
37 M 49527 60 PS
MANSFIELD, CARL M. K U MED CENTER - RM 117B.66103
588-7350
28 M 1003 56 TR
MARTIN, NORMAN L. K U MED CENTER.66103
588-6800
36 M 1902 62 DR
MARVIN, NORMAN G. KUMC 39TH AT RAINBOW.66103
588-6394
29 M 1902 56 FP
MASTERS, FRANCIS W. KU MED CENTER.66103
588-6142
20 M 3545 45 PS
MASTERSON, BYRON J. KUMC.66103
588-6216
33 M 2802 58 GYN
MATHEWSON, HUGH S. KUMC.66103
588-6675
21 M 1902 44 ANES
MATTIOLI, LEONE, KUMC.66103
588-6311
32 M 56115 56 POC
MCCARTHY, ROBERT P. 155 S 18TH.66102
342-7233
25 M 2834 53 U
MEBUST, WINSTON K. KU MED CENTER.66103
588-6148
33 M 5404 58 U
MEDEARIS SR, DONALD N. 3100 MINN AVE.66102
-
01 M 2401 27 OO
MEEK JR, JOSEPH C. KU MED CENTER.66103
588-6023
31 M 1902 57 IM
MELHORN, J MARK, 3740 BOOTH - APT 10.66103
-
53 M 1902 80
MESINA, ROLANDO R. 1102 MINNESOTA AVE.66102
371-3829
37 M 74801 61 GS
MINER JR, PHILIP B. K U MED CENTER.66103
588-6990
46 M 702 71 GE
MOELLER, DONALD D. 155 S 18TH.66102
371-4301
34 M 1902 60 GE
MOFFAT, ROBERT E. K U MED CENTER.66103
588-6800
42 M 1902 68 DR
MCORE, WAYNE V. K U MED CENTER.66103
588-6336
42 M 2604 70 PO
MORANTZ, ROBERT A. KUMC.66103
588-6119
42 M 3519 67 NS
MORFFI, RAUL R. 5411 LEAVENWORTH RD.66104
287-8300
25 M 27501 51 IM
MORRISON, RICHARD A. KU MED CENTER.66103
588-6815
34 M 1902 60 TR
MULLEN JR, CLIFFORD J. 9201 PARALLEL.66112
334-4250
38 M 1902 64 OPH
MULLEN SR, CLIFFORD J. 1828 WASH 8LVD.66102
-
98 M 3006 23 OO
NASON, HERBERT M. 1225 NORTH 78TH.66112
299-1616
30 M 1902 56 FP
NEFF, JAMES R. KU MED CENTER.66103
588-6198
40 M 1902 66 DR5
NEIGHBOR, ERNEST G. 1420 S 42ND.66106
831-1100
06 M 1902 33 FP
NEIGHBOR, GAYLORD P. 1420 SOUTH 42ND.66106
831-1100
13 M 1902 41 FP
NELSON, WILLIAM PAUL. KU MED CENTER.66103
588-6015
30 M 1002 56 CO
NEWKIRK, DARREL D. 619 ANN AVE.66101
321-4803
42 M 2101 67 PH
NOHE, PHILIP C. 266 NEW BROTHERHOOD BLDG.66101
321-4422
17 M 1902 42 DR5
NORRIS, CHARLEY W. KUMC.66103
588-6700
33 M 1902 64 OTG
NOTHNAGEL, ARNOLD F. 1610 WASHINGTON BOULEVARD.66102
342-1100
15 M 1902 39 GS
NUNEZ, JULIAN, 4631 ORVILLE #209.66102
299-2088
30 M 27501 60 FP
O'BOYNIK II, PAUL LEONARD. KU MED CENTER.66103
588-5000
48 M 1902 73 NS
OLDFIELD, RAY W. 4631 ORVILLE.66102
287-3537
45 M 1902 72 FP
OTHMER, EKKEMARD, K U MEDICAL CENTER.66103
588-6440
33 M 40721 66 P
OKLER JR, JOHN EDWARD, 155 S 18TH.66102
321-2974
46 M 1902 72 IM
PARDO, LILLIAN G. KU MED CENTER.66103
588-5909
39 F 74807 62 PON
PAROO, MANUEL P. K U MEDICAL CENTER.66103
588-6464
35 M 74801 62 P
PAREKH, AJITKUMAR M. 6013 LEAVENWORTH RD.66104
299-2069
47 M 49501 71 PUO
PARK, CHAN H. K U MEDICAL CENTER.66103
588-6029
36 M 58302 62 IM
PARRA, MIGUEL D. 6013 LEAVENWORTH RD.66104
299-2088
37 M 84710 64 FP
PASCHINO, ANTONIO R. 4631 ORVILLE #215.66102
287-7100
22 M 13201 60 P
PATAK, RAMACHANDRA V. KU MEDICAL CENTER.66103
588-6983
43 M 49509 66 N
PAZELL, JOHN A. 4631 ORVILLE.66102
287-6464
40 M 2501 66 DR5
PECANA, MANUEL C. BETHANY MED CENTER.66102
281-8896
45 M 74801 69 ANES
PERKINS, WILLIAM GENE, C&Y CLINIC.66101
321-3055
49 M 1902 74 PD
PERRY JR, LAWRENCE L. KUMC 39TH AT RAINBOW.66103
588-6522
34 M 1902 59 FP
PETELIN, JOSEPH B. 3227 N 54TH.66104
588-6100
49 M 1902 76 GS
PETERS, GLENN R. 155 SOUTH 18TH.66102
371-6800
12 M 1902 37 GS
PIERCE, GEORGE E. KUMC - PO BOX 255.66103
588-6115
33 M 2307 60 TS
PISCHKE, FRANK J. 255 NEW BROTHERHOOD BLDG.66101
321-1161
36 M 1902 62 OTG
POL, P ALBERT, 4631 ORVILLE -SUITE 215.66102
287-7100
36 M 84710 67 P
PORTER, DAVID M. 4517 TROUP.66102
287-8800
39 M 4707 64 PO
POTTER, ROBERT L. 1969 N 33RD.66102
321-0341
38 M 1902 64 IM
POWERS, G ROBERT, 9201 PARALLEL.66112
299-1474
33 M 1902 65 FP
PREMSINGH, NALINI G. 4631 ORVILLE #202.66102
596-2000
39 F 49508 65 CD
PRESTON, DAVID F. KU MED CENTER.66103
588-6810
33 M 3841 59 NM
PRETZ, JAMES B. 1610 WASHINGTON BOULEVARD.66102
342-2442
24 M 1902 47 FP
PRICE, JAMES GORDON, K U MED CENTER.66103
588-6510
26 M 702 47 FP
PROUD, G ONEIL, KU MEDICAL CENTER.66103
588-6700
13 M 2802 39 OTG
PUGH, DAVID M. K U MED CENTER.66103
588-6015
29 M 801 58 CO

QUAISON, EMMELINE P. KUMC.66103
 588-6463
 45 F 74802 69 P
 QUINN, CHARLES E. 1 GATEWAY CTR 4TH & STATE.66101
 321-3355
 43 M 4707 68 OBG
 RECKLING, FREDERICK W. KUMC.66103
 588-6129
 34 M 3545 59 ORS
 REDDY, EASHWER K. K U MED CENTER - RAO DEPT.66103
 588-7350
 44 M 49597 68 TR
 REDFORD, JOHN W B. K U MED CENTER.66103
 588-6777
 28 M 6501 53 PM
 REGIER, HENRY L. 2000 WASHINGTON BOULEVARD.66102
 -
 81 M 1902 07 OO
 RETTENMAIER, ALBERT J. 251 NORTH 15TH STREET.66102
 -
 96 M 3006 26 OO
 RHODES, JAMES B. KU MEDICAL CENTER.66103
 588-6019
 28 M 1902 58 GE
 RHODES, MARTIN L. 1969 N 33RD.66102
 321-0341
 47 M 1902 72 IM
 RICE JR, FREDERICK A. 1029 N 32ND ST.66102
 281-5252
 36 M 4812 63 ORS
 RICK JR, GREGORY GP. 155 S 18TH ST.66102
 371-4301
 40 M 1902 66 GE
 RILEY, RAY B. 2020 ORVILLE.66102
 -
 06 M 1902 36 OO
 RISING, JESSE O. KU MEDICAL CENTER.66103
 588-7130
 14 M 1902 38 IM
 ROBINSON, DAVIO W. KU MEDICAL CENTER.66103
 588-6136
 14 M 4101 38 PS
 ROBINSON, JOHN O. K U MED CENTER.66103
 588-6670
 48 M 1902 74 ANES
 ROBINSON, RALPH G. KU MEDICAL CENTER.66103
 588-6810
 37 M 1902 62 NM
 ROBISON, JAMES T. KUMC.66103
 588-6600
 21 M 4812 45 OPH
 RODRIGUEZ, RAUL G. 4631 ORVILLE - SUITE 215.66102
 287-7100
 42 M 26401 68 P
 ROOK, LEE E. 4116 STRONG.66106
 831-2834
 09 M 1902 38 FP
 ROSENTHAL, STANTON J. K U MED CENTER.66103
 588-6800
 46 M 1902 71 OR
 ROTH, ALAN E. BETHANY HOSPITAL 51 N 12.66102
 281-8814
 35 M 1902 62 PATH
 RUBIN JR, BEN. 132 S SEVENTEENTH.66102
 371-2561
 37 M 3005 61 PO
 RUTH, WILLIAM E. K U MED CENTER.66103
 588-6044
 26 M 1902 53 PUO
 RYAN, MICHAEL J. 764 NEW BROTHERHOOD BLOG.66101
 342-7070
 14 M 2834 37 OTO
 SAVIN, VIRGINIA J. KU MED CENTER.66103
 588-6983
 44 F 4112 70 IM
 SCHAUM, STEPHEN P. 4517 TROUP.66102
 287-8800
 44 M 1902 70 PO
 SCHIMKE, R NEIL. KU MED CENTER.66103
 588-6043
 35 M 1902 62 IM
 SCHOTLAND, EDWARD S. 1300 N 78TH STE 303.66112
 334-5250
 36 M 86901 66 OPTH
 SCHREPFER, ROSEMARY. KU MED CENTER.66103
 588-6200
 22 F 1902 47 OBG
 SCHWORM, CURTIS P. 155 SOUTH 18TH.66102
 371-4343
 47 M 3005 73 OR
 SERERES, EDGAR P. 662 NEW BROTHERHOOD BLOG.66101
 321-2501
 15 M 1902 39 FP

SHERMAN, ROBERT P. 9201 PARALLEL AVE.66112
 334-0040
 34 M 1902 63 PUO
 SHUSS, JOHN LOGAN. 3816 STATELINE.66103
 588-5000
 49 M 1902 75 GS
 SIFERS, EARL C. 155 S 18TH.66102
 371-2900
 24 M 1902 47 GS
 SILVERGLAT, MICHAEL J. K U MED CENTER.66103
 588-6464
 43 M 1902 72 P
 SILVERS, ALVIN. 1702 SW BOULEVARD.66103
 236-9691
 18 M 1902 45 FP
 SKIKNE, BARRY S. KU MED CENTER.66103
 588-6031
 45 M 83601 61 HEM
 SMITH, STEPHEN O. K U MED CENTER.66103
 588-6300
 45 M 3006 71 PO
 SOUCEK, CHARLES O. 155 S 18TH.66102
 371-4343
 31 M 3005 56 R
 SPAULDING, JOHN S. KU MED CENTER.66103
 588-5900
 29 M 1602 59 PO
 SPEER, LELAND. 1022 HOEL PARKWAY.66102
 321-1040
 12 M 1902 36 PO
 STECHSCHULTE, DANIEL J. K U MED CENTER.66103
 588-6008
 36 M 2834 62 A
 STEELE, CLARENCE H. 255 BROTHERHOOD BLOG.66101
 321-1161
 14 M 1902 40 OTO
 STEINZEIG, SHERMAN M. 155 S 18TH.66102
 621-1151
 25 M 1902 52 CO
 STEPHENS, RONALD L. KUMC.66103
 588-6029
 39 M 1902 65 IM
 STEVENSON, CHARLES E. KUMC.66103
 588-6670
 19 M 1902 44 ANES
 STEWART, DAVIO R. K U MED CENTER.66103
 588-6124
 38 M 3545 64 POS
 STITT, RONALD W. 155 S 18TH.66102
 342-7233
 21 M 1902 45 U
 STOKES, ROBERT LEE, 51 N 12TH.66102
 281-8882
 43 M 4804 74 EM
 STUBBLEFIELD, CHARLES T. 155 S 18TH.66102
 371-2330
 32 M 1902 58 OBG
 SULLIVAN, TOMMY GRAY. KU MED CENTER-3C- OB/GYN.66103
 588-6208
 44 M 1902 71 OBG
 TAYLOR, THOMAS L. 155 S 18TH ST.66102
 371-2900
 40 M 1902 66 GS
 TEMPLETON, ARCH W. K U MEDICAL CENTER.66103
 588-6805
 32 M 3005 57 R
 TENG, SIOE-HONG. 2205 W 36TH.66103
 384-1880
 33 M 50602 62 P
 THEROU, LEONA F. K U MEDICAL CENTER.66103
 588-6302
 41 F 6701 67 PO
 THOMAS, JAMES H. K U MED CENTER.66103
 588-5901
 41 M 2012 66 GS
 THOMAS, THOMAS V. 211 INDIAN SPRINGS MED BL.66102
 287-2600
 37 M 49549 61 COS
 THOMPSON, DANNIE M. ONE GATEWAY CENTER.66101
 321-3355
 35 M 4707 64 OBG
 TOALSON, WILLIAM B. 155 S 18TH ST.66102
 371-3515
 37 M 1902 63 CO
 TRUEWORTHY, ROBERT C. KU MED CENTER.66103
 588-5701
 40 M 2802 66 PO
 UTLEY, JAMES HARMON. 51 N 12TH.66102
 281-8880
 51 M 1606 74 EM
 VALK, WILLIAM L. KU MED CENTER.66103
 588-6146
 09 M 2501 37 U

VAN THULLENAR, PHILIP A. BETHANY MED CENTER, 66102
281-8834
31 M 2834 57 PATH
VARGHESE, GEORGE, K U MEDICAL CENTER, 66103
488-6798
44 M 49509 69 PM
VATS, TRISHAWAN S. KUMC, 66103
588-5701

40 M 49529 63 PD
VILLANUEVA, CESAR L. K U MED CENTER, 66103
588-6200
39 M 74802 65 OBG

VISSER, VALYA E. KU MED CENTER, 66103
588-6337
47 F 1803 73 PD

VOPAT, RICHARD L. 4037 CAMBRIDGE, 66103

54 M 1902 MDST
WADDELL, BILL D. 155 SOUTH 18TH, 66102
321-0386
31 M 3901 56 1M

WALKER, JACK D. KU MED CENTER, 66103
588-6522
22 M 1902 53 FP

WALKER, MAURICE A. 3214 STRONG AVE, 66106
831-1433
04 M 1601 28 GS

WAXMAN, DAVID, K U MED CENTER, 66103
588-1207
18 M 3515 50 1M

WEIGEL, JOHN W. UROLOGY DEPT KU MED CTR, 66103
588-6148
29 M 1902 54 U

WELLER, RONALD ALAN, KU MED CENTER - PSY DEPT, 66103
588-6464
48 M 2834 74 P

WEST, C OMER, 414 HURON BLDG, 66101
371-3572
92 M 1902 23 D

WILLIAMS JR, STERLING B. K U MEDICAL CENTER, 66103
588-6200
41 M 401 73 OBG

WILLIAMSON, JOHN A. K U MED CENTER BOX 783, 66103
588-5000
51 M 1902 76 ORS

WINTER JR, CALVERT J. 132 S 17TH, 66102
371-2561
22 M 1902 47 PD

WOLF, KARL T. 621 NORTHRUP AVE, 66101

14 M 1902 48 OD
WOLKOFF, A STARK, K U MED CENTER, 66103
588-6200
21 M 4109 52 OBG

WONG, BERT Y. K U MED CENTER, 66103
588-6015
40 M 801 65 CD

WRIGHT JR, ROBERT W. 669 NEW BROTHERHOOD BLDG, 66101
371-5344
24 M 1902 48 GS

YULICH, JOHN O. 1428 S 32ND, 66106
384-1630
33 M 1902 59 FP

ZIEGLER, DEWEY K. KU MED CENTER, 66103
588-6985
20 M 2401 45 N

ZINN, THOMAS W. 155 S 18TH, 66102
371-4343
41 M 1902 67 R

KANSAS CITY, MO—816

BOUDET, ROBERT A. V A HOSP, 64128
861-4700
36 M 1103 62 GS

CALKINS, W GRAHAM, V A HOSP, 64128
861-4700
26 M 2501 50 GE

COULTER, THOMAS B. 4620 J C NICHOLS PKWY, 64112
931-0833
38 M 1205 64 OPH

CRONMEYER, RICHARD L. 212 WEST 78TH TERR, 64114
52 M 1902
DAVIS JR, JAMES W. V A HOSP, 64128

861-4700
33 M 4705 57 1M

DIEHL, ANTONI M. 618 MEDICAL PLAZA, 64111
753-4414
24 M 2604 47 PDC

ESTES, NORMAN CLEON, UMKC SCHOOL OF MEDICINE, 64108
474-4100
40 M 1902 71 GS

FELT, SAMUEL E. 8642 CHESTNUT CIR #4, 64131

46 M 1902 72 DD
FESTOFF, BARRY W. VA HOSPITAL, 64128
861-4700

40 M 1102 77 N
GODFREY, ROBERT G. VA HOSP, 64128
861-4700

27 M 1902 58 RHU
HENDERSON, JOHN M. 4143 ROANOKE RD, 64111

41 M 1902
HUFFMAN, DAVID H. V A HOSP, 64128
861-4700

41 M 1902 67 1M
JOHNS JR, LEO E. V A HOSP, 64128
861-4700

22 M 2101 45 PUD
LEWIS JR, H DANIEL, V A HOSP, 64128
861-4700

32 M 5101 58 CD
MC CLINTICK, MICHAEL D. 5104 NE 37TH, 64117

50 M 1902 75 FP
PAYNE, J RALPH, 4460 ROCKHILL TERRACE, 64110
334-2500

40 M 1902 62 EM
ROLLINS, DOUGLAS E. V A HOSPITAL, 64128
861-4700

44 M 4901 73 1M
SINGER, PHILIP A. V A HOSPITAL, 64128
861-4700

42 M 3545 69 N
SLEEPER, CAROL A. 20 E FOURTEENTH, 64142

33 F 1902 58 PATH
STEIN, ROBERT THOMAS, 1010 CARONDELET DR, 64114

44 M 2834 70 PD
STILLIE, G DONALD DO. 7609 LOCUST, 64131

48 M 2878 78 RT
VEMIREDDI, NANDA KUMAR, REHABILITATION MED SERVIC, 64015
861-4700

41 M 64 PM
WATERS III, CHESTER H. 7135 NW COUNTRY CLUB LANE, 64152
588-6131

49 M 3005 75 ORS

KINGMAN—316
(Pratt-Kingman Society)

BLOOM, L THEIL, 708 N MAIN, 67068
532-3147
32 M 1902 57 R

BOYER, ROBERT E. 349 N MAIN, 67068
532-3171
36 M 1902 63 FP

KINSLEY—316
(Edwards County Society)

ATWOOD, M DALE, 616 NILES, 67547
659-2114
19 M 1902 51 FP

MCKIM, W LYNN, 109 WEST 8TH, 67547
659-2137
33 M 1902 59 FP

SCHNOEBELE, RENE E. 807 EAST 4TH, 67547
659-2141
16 M 3901 40 FP

KIOWA—316
(Tri-County Society)

CHRISTENSEN, MARION D. 802 DRUMM, 67070
825-4121
25 M 3901 52 FP

LA CROSSE—913
(Central Kansas Society)

BHARGAVA, ASHOK KUMAR, 208 FAIRWAY DR, 67548
653-2185
37 M 49547 64 FP

LANSING—913
(Leavenworth County Society)

SNOW, DONALD L. HOLIDAY PLAZA, 66043
727-3204
21 M 64901 54 OBG

LARNED—316
(Pawnee County Society)

BRENNER, WILLIAM R. 804 CARRDLL, 67550
285-3133
15 M 3006 39 EP
CRAM JR, OLE R. 722 MANN, 67550
285-2141
18 M 1902 43 EP
DAVIS, DAVID H. 815 W 6TH, 67550
285-2131
04 M 1902 30 P
EWING, THOMAS D. 804 CARROLL, 67550
285-3133
22 M 1902 46 EP
SHAH, MIAN, 313 W 14TH, 67550
285-3173
32 M 70403 58 GS
SHAH, NASREEN, 313 W 14TH, 67550
285-3173
39 E 70409 62 DBG
SHEPARD, LEROY W. 603 W 5TH, 67550
-
04 M 3006 30 OD
SMITH, JOHN D. 804 CARRDLL, 67550
285-3133
22 M 3901 51 EP

LAWRENCE—913
(Douglas County Society)

ANDERSON, WINSTAN L. 3603 W 10TH ST, 66044
-
09 M 1902 34 OD
AUCHARD, VIRGIL M. 2126 LOUISIANA, 66044
-
89 M 1902 23 OD
BAILEY, WILLIAM A. 404 MAINE ST, 66044
843-9125
40 M 1902 66 ORS
BELOT JR, MONTI L. LAWRENCE NATIONAL BK BLDG, 66044
843-6340
13 M 1902 40 EP
BIERI, PETER V. 944 KENTUCKY, 66044
841-5217
45 M 1902 71 ENT
BISHOP, RODNEY LEE, 346 MAINE, 66044
842-7200
49 M 1902 75 1M
BITTENBENDER, LEE R. 930 IOWA, 66044
842-7001
46 M 1902 72 D
BLAIR, T RICHARD, 404 MAINE STE 4, 66044
842-3635
34 M 1902 60 1M
BOYDEN, MARY S. MEDICAL ARTS BLDG, 66044
842-3778
14 F 2604 38 PDA
BRANSON, VERNON L. 346 MAINE, 66044
842-4477
17 M 1902 42 PD
BRAY, E DEAN, 346 MAINE, 66044
842-5070
29 M 1902 60 FP
BRUNER, STEVEN C. 500 ROCKLEDGE, 66044
841-6540
46 M 1902 72 FP
BUCK JR, HENRY W. MEDICAL ARTS BLDG, 66044
843-0677
34 M 1902 60 OBG
BUTTON, JESSE H. 935 IOWA ST, 66044
841-3535
35 M 1902 63 P
CARNAHAN, ROBERT L. 944 KENTUCKY, 66044
841-4310
42 M 1902 70 1M
CHEDIAK, ELIAS, 601 MISSOURI, 66044
841-7430
39 M 84704 65 P
CLINTON, DALE L. 15 E 7TH, 66044
841-5716
21 M 1902 54 PH
CULVER, WARREN T. 2500 W 6TH, 66044
842-4178
20 M 3508 46 OPH

DUNLAP, RICHARD L. MEDICAL ARTS CENTER, 66044
842-4344
12 M 3005 37 ENT
ERIESEN, DALE, 2500 WEST 6TH, 66044
842-7026
47 M 1902 74 ANES
GILLES, HELEN M. MED ARTS CENTER, 66044
842-4477
22 F 1902 45 PD
GODWIN, PHILLIP A. 500 ROCKLEDGE, 66044
841-6540
28 M 1902 55 ANES
GRAY, CAPTAIN KING, MEDICAL ARTS BLDG - STE 3, 66044
842-7200
48 M 1902 75 1M
HAGGAN, MARGARET E. WATKINS MEM HOSP, 66044
843-4455
E EP
HASSELLE III, JAMES E. BERT NASH CDMM MTL HLTH, 66044
843-9192
35 M 4706 59 P
HATTON, DONALD W. 404 MAINE ST, 66044
842-3635
42 M 1902 68 1M
HERMES, RICHARD L. THE MEDICAL ARTS CENTER, 66044
843-0677
15 M 4112 39 OBG
HIEBERT, DAVID L. 404 MAINE, 66044
841-3211
36 M 1902 61 R
HIRD, WAYNE E. 329 MISSOURI, 66044
842-4300
26 M 1902 50 TS
HUGHES, ROBERT WALTER, MEDICAL ARTS BLDG, 66044
843-1374
27 M 1902 54 EP
INGHAM JR, H LAIRD, 404 MAINE, 66044
842-3635
45 M 3901 70 1M
JONES, H PENFIELD, MED ARTS CENTER, 66044
842-0211
06 M 2401 31 GS
JOSEPH, HOWARD E. DDCTORS BUILDING, 66044
843-3981
26 M 1902 51 U
KIMBROUGH, VICTORIA E. 935 IOWA, 66044
843-8425
10 F 4706 37 OPH
LEARNED, GEDRGE R. 401 ARKANSAS, 66044
843-5502
22 M 1902 55 GS
LESSENDEN, GLENN A. MED ARTS BLDG, 66044
843-6233
24 M 1902 48 EP
LOVELAND, G CHARLES, 346 MAINE, 66044
842-4477
47 M 1902 73 PD
MADSEN, GLENN L. 404 MAINE, 66044
841-3211
38 M 3005 65 R
MANAHAN, G EUGENE, MED ARTS CENTER, 66044
842-0211
19 M 1902 44 GS
MITCHELL, ALEX C. 1626 W 20TH, 66044
843-4739
18 M 1902 50 EP
MODDRELL, CAROL A. 404 MAINE, 66044
843-3680
45 E 1902 71 PATH
NELSON, RICHARD O. 935 IOWA, 66044
843-0921
11 M 1001 41 FP
OELSCHLAGER, RONALD D. 404 MAINE, 66044
841-3211
43 M 1902 69 R
OLSON, CARL E. 935 IOWA, 66044
842-9911
17 M 1611 46 EP
ORCHARD, RICHARD A. 932 MASSACHUSETTS ST, 66044
841-2280
41 M 2802 68 OPH
OWEN, GARRY D. 4TH & MAINE, 66044
843-0677
37 M 1902 63 ORG
PEES JR, GERALD BOYD, 901 KENTUCKY, 66044
843-5160
45 M 1902 71 1M
PRAEGER, MARK A. 825 VERMONT, 66044
843-2010
42 M 1902 68 GS
PRICE JR, LAURANCE W. 404 MAINE ST, 66044
843-3680
33 M 1902 59 PATH

REED, RALPH R. 404 MAINE, 66044
 842-3635
 27 M 1902 53 1M
 REESE, JOHN L. 346 MAINE, 66044
 842-6644
 35 M 1902 61 GS
 ROBERTS, RICHARD S. 308 MAINE, 66044
 843-6137
 19 M 2802 44 GS
 SANDERS, J ALAN, LAWRENCE MEMORIAL HDSP, 66044
 842-2083
 29 M 1902 60 PATH
 SCHNOSE, GREGORY D. 901 KENTUCKY #101, 66044
 843-5160
 51 M 1902 76 1M
 SCHROEDER, SYDNEY D. WATKINS MEMORIAL HDSP, 66044
 864-4045
 18 M 1902 44 P
 SCHWEGLER, RAYMOND A. MEDICAL ARTS CENTER, 66044
 843-4455
 07 M 2604 31 DBG
 THOMSEN, STEVEN T. 500 ROCKLEDGE, 66044
 844-6540
 47 M 3005 72 FP
 TOTTEN, FREDERICK E. WATKINS MEM HDSP, 66045
 843-4455
 17 M 1902 50 1M
 TUCKER, VIRGINIA L. A-Z CORNISH SQUARE, 66044
 843-3750
 30 F 1902 57 PD
 WALTERS, BYRON W. 1030 AVALON RD, 66044
 843-6751
 13 M 1902 39 FP
 WELL, MICHAEL A. 944 KENTUCKY, 66044
 843-3981
 41 M 1606 67 U
 WERTZBERGER, JOHN, 404 MAINE ST, 66044
 843-9125
 36 M 1902 63 DRS
 WILCOX SR, HOWARD L. MEDICAL ARTS CENTER, 66044
 843-0677
 18 M 3520 44 DBG
 WOLLMANN, MARTIN, 2615 ORCHARD LN, 66044
 843-9530
 26 M 1902 57 1M
 WRIGHT, M ERIK, 2728 STRATFORD ROAD, 66044
 -
 15 M 502 50 P

LEAVENWORTH—913
 (Leavenworth County Society)

ANWAR, M ZIA, 109 DELAWARE, 66048
 651-2977
 39 M 11801 67 1M
 BARRY, DAVID R. 500 EISENHOWER RD, 66048
 727-6000
 42 M 1902 68 FP
 BENNETT, CHARLES A. 1009 S BROADWAY, 66048
 682-4373
 96 M 1902 25 FP
 CENAC, MARK T. 500 EISENHOWER RD, 66048
 727-6000
 27 M 401 49 GS
 COMBS, G RALPH, 510 FIFTH, 66048
 -
 79 M 4101 02 DD
 COMBS, PETER S. 213 DELAWARE, 66048
 682-0242
 14 M 4101 41 1M
 DE SPUZA, DERRICK J. 520 SIXTH AVE, 66048
 682-6661
 43 M 49501 66 GS
 DUYSAK, SAMI, 520 6TH AVE, 66048
 682-6661
 22 M 90201 47 1M
 GERBER, HARRY A. 605 N 6TH, 66048
 682-3893
 96 M 5606 30 FP
 GERJARUSAK, PRAPAS, 500 EISENHOWER RD, 66048
 727-6000
 46 M 89101 71 1M
 GRAHAM, J MALCOLM, 500 EISENHOWER RD, 66048
 727-6000
 28 M 3840 54 PD
 GRAHAM, KENNETH L. 500 EISENHOWER RD, 66048
 727-6000
 21 M 3840 45 GS
 GRAHAM, THOMAS W. 500 EISENHOWER RD, 66048
 727-6000
 26 M 3840 50 1M

GRIDLIA, ANDRES, 424 WALNUT ST, 66048
 682-5400
 27 M 84708 50 DRS
 HAMMEKE, JOHN C. 3601 S 4TH ST TRAFFICWAY, 66048
 682-5201
 27 M 401 61 DPH
 JOHNSON, PAUL D. MEDICAL ARTS BLDG, 66048
 682-6661
 36 M 1902 61 FP
 MCCOLLUM, MARY B. 607 SHAWNEE, 66048
 651-6566
 43 F 4804 68 P
 MCCOLLUM, WILLIAM B. 3601 S FOURTH, 66048
 682-6661
 41 M 1902 66 TS
 MCKEE, RICHARD S. 422 WALNUT, 66048
 682-1023
 05 M 1902 35 ANES
 MERRITT, W HENRY, 520 6TH AVE, 66048
 682-6661
 14 M 702 39 GS
 NAGESH, KAVI G. PD BDX 1204, 66048
 682-2000
 32 M 49509 58 1M
 PALMER, MARVIN M. 1012 S 21ST COURT, 66048
 727-6000
 45 M 702 71 DBG
 PARKER, ROBERT W. 500 EISENHOWER RD, 66048
 727-6000
 45 M 1902 71 FP
 HARE, MELVIN A. 520 SIXTH AVE, 66048
 682-6661
 14 M 1902 37 GS
 STRUTZ, WILLIAM C. 68 WESTWOOD DR, 66048
 682-8868
 08 M 5606 43 R
 TAMBURINI, MARIO, 2605 S 16TH, 66048
 682-8950
 16 M 13201 49 R
 VDDRHEES, CARROLL D. 520 SIXTH AVE, 66048
 682-6661
 25 M 1902 52 FP
 VDDRHEES, GORDON S. MEDICAL ARTS BUILDING, 66048
 642-6661
 12 M 1902 39 1M

LEBOWITZ—316
 (Coffey Flint Hills Society)

HUNTER, KENNETH R. 66856
 256-2565
 07 M 1902 39 FP

LEES SUMMIT, MO—816
 (Wyandotte County Society)

BRIDEN-SANDERS, CAROLINE, 617 A WILLOW DR, 64063
 -
 12 F 1902 36 DD
 WALKER, NELLIE G. 501 MOORE ST #201F, 64063
 524-7109
 07 F 1902 34 DD

LENORA—913
 (Northwest Kansas Society)

STEICHEN, EDWARD F. 67645
 -
 05 M 1601 31 DD

LIBERAL—316
 (Seward County Society)

ALLEN, RAY E. 2 PLAZA DR, 67901
 624-5691
 37 M 1902 64 1M
 CAEDD, CARMELITA D. PD BDX 1643 SW MED CENTER, 67901
 624-1651
 41 F 74801 63 PATH
 CAMPION, WOODROW M. 121 W THIRD, 67901
 624-2594
 13 M 1902 39 1M

GRIMES, I ROSS, 222 W 15TH, 67901
 624-1676
 27 M 3901 54 TS
 HARRIS, NDRVAN O, 222 W 15TH, 67901
 624-3811
 20 M 1902 44 DBG
 HDLCOMB, WILLIAM M, 15 E 11TH, 67901
 624-2252
 31 M 3901 56 GS
 KDDNS, JESS W, 1210 N WASHINGTON, 67901
 624-3841
 27 M 1902 57 OPH
 MCCREIGHT, EUGENE J, 809 S PENN, 67901
 -
 00 M 1902 26 DD
 NEVINS, RICHARD L, 610 WEST 11TH, 67901
 624-1841
 47 M 3901 73 FP
 PALMER JR, H C, 2 PLAZA DRIVE, 67901
 624-5691
 36 M 1902 63 IM
 PROCHAZKA, DTTD F, BDX 1809, 67901
 624-1651
 12 M 1902 38 R
 RATHBUN, EDWIN O, 610 W 11TH, 67901
 624-1841
 36 M 1902 62 FP
 REESE, JACK D, 15 E 11TH, 67901
 624-6226
 32 M 1902 57 FP
 SEAGD, CHARLOTTE L, 1031 N KANSAS, 67901
 624-1625
 35 F 1720 60 PD
 WADE, THEODORE E, 318 NORTH LINCOLN, 67901
 -
 04 M 512 30 OD

LINCOLN—913
(Central Kansas Society)

MADDEN, WILLIAM J, 206 WEST LINCOLN, 67455
 524-5154
 24 M 1902 51 FP
 SONGER, HERBERT L, 67455
 524-4053
 12 M 1902 38 FP

LINDSBORG—913
(McPherson County Society)

FREDRICKSON, DUANE E, 121 W LINCOLN, 67456
 227-3371
 39 M 1902 66 FP
 FULLER, DERYL D, 121 W LINCOLN, 67456
 227-3371
 25 M 1902 50 FP
 MURFITT, MALCOLM C, 231 N MAIN, 67456
 227-2732
 13 M 801 41 FP

LYNDON—913
(Franklin County Society)

STDUT, NILES M, 66451
 828-4521
 16 M 1902 50 FP

LYONS—316
(Rice County Society)

GARWOOD, JAN, LYONS MED CTR, 67554
 257-5124
 49 M 1902 74 FP
 GRIMES, JAMES T, 1221 W NOBLE, 67554
 257-5124
 27 M 1902 53 FP
 SIEMENS, RICHARD A, 1221 W NOBLE, 67554
 257-5124
 30 M 1902 59 FP
 WOLF, CURTIS V, 1221 W NOBLE, 67554
 257-5124
 37 M 1902 64 FP

MANHATTAN—913
(Riley County Society)

BAKER, RICHARD B, 1133 COLLEGE, 66502
 537-4200
 42 M 4113 68 ORS
 BALL, RALPH G, 215 S DELAWARE, 66502
 -
 03 M 1902 27 DD
 BASCOM, GEORGE S, 1133 COLLEGE, 66502
 539-6574
 27 M 2401 52 GS
 BDESE, KENNETH M, 1133 COLLEGE AVE, 66502
 776-4744
 25 M 1902 56 FP
 BROWN, ROBERT M, 1133 COLLEGE, 66502
 532-6544
 31 M 1902 63 FP
 BURDICK, BRUCE M, MANHATTAN PSYCH CLINIC, 66502
 776-9411
 25 M 512 53 P
 CATHEY, ROBERT H, 1133 COLLEGE AVE, 66502
 537-4990
 42 M 1902 68 O
 CRANE, C HERBERT, 1133 COLLEGE, 66502
 537-9030
 22 M 3520 46 PD
 DURKEE, WILLIAM R, 1133 COLLEGE AVE, 66502
 776-4744
 23 M 1902 45 IM
 FAIRCHILD, JOHN A, 756 COLLEGE HTS CIR, 66502
 539-4041
 14 M 3006 41 OD
 FISCHER, REX R, 1133 COLLEGE, 66502
 539-5322
 34 M 3005 60 DBG
 FREEMAN, FRED A, MANHATTAN MED CENTER, 66502
 537-8710
 42 M 1902 69 U
 GARDNER, JAMES O, 1133 COLLEGE AVE, 66502
 537-4940
 43 M 2834 71 IM
 HEASTY, ROBERT G, 1133 COLLEGE, 66502
 539-5322
 11 M 3519 38 DBG
 HDSTETTER, PHILIP H, 821 PDYNTZ, 66502
 537-2544
 17 M 1902 42 FP
 HUNTER JR, JAMES S, 1133 COLLEGE, 66502
 539-5501
 18 M 2301 41 DBG
 JUBELT, HILBERT P, 1133 COLLEGE, 66502
 537-9030
 19 M 1611 43 PD
 KALDOR, RICHARD H, PO BDX 128, 66502
 539-5363
 40 M 2401 66 PATH
 KEMPTHORNE, CHARLES R, 519 N 11TH, 66502
 -
 03 M 5605 32 DD
 KIRK, THOMAS E, 206 SOUTHWIND, 66502
 537-0655
 44 M 3005 71 DPH
 KLINGLER JR, EUGENE A, 1133 COLLEGE, 66502
 539-5341
 35 M 1902 62 GS
 LAFENE, BENJAMIN W, 1844 ANDERSON AVE, 66502
 -
 01 M 3806 31 OD
 LDWE, STANLEY W, 1133 COLLEGE AVE, 66502
 776-3451
 32 M 1902 59 DPH
 LYONS JR, FRANK C, 1133 COLLEGE AVE, 66502
 539-7641
 44 M 3840 70 DR
 MARSHALL, RONALD L, 1133 COLLEGE AVE, 66502
 539-5322
 42 M 3005 67 DBG
 MARTIN, DANIEL C, LAFENE HEALTH CENTER KSU, 665
 532-6544
 30 M 1902 58 IM
 MCKNIGHT, DAVID E, 1133 COLLEGE AVE, 66502
 539-7641
 32 M 1902 62 R
 MCNEIL, ELBERT D, 1133 COLLEGE, 66502
 537-9030
 22 M 702 48 PD
 MEEK, PALMER F, 1133 COLLEGE, 66502
 537-2651
 45 M 1902 71 IM
 MILLER, ABRAHAM H, 1133 COLLEGE, 66502
 527-2651
 29 M 4101 54 IM

MOSIER, STEVEN J. 215 SOUTHWIND PLACE, 66502

776-9761

49 M 1902 74 FP

MOWRY, GERALD L. 1133 COLLEGE, 66502

539-5322

26 M 1902 53 OBG

OLNEY, ROBERT D. 1133 COLLEGE AVE, 66502

539-7555

27 M 3005 51 GS

PETERSON, JACK T. 1133 COLLEGE, 66502

539-5363

25 M 1902 50 PATH

PHILLIPS, STEPHEN B. LAFENE ST HEALTH CENTER, 66506

532-6544

17 M 1902 45 1M

REITZ, LELAND C. 1133 COLLEGE, 66502

537-2651

36 M 1902 63 1M

REITZ, ROGER P. 1133 COLLEGE, 66502

537-2651

32 M 1902 59 1M

ROSE, GRAHAM C. 1133 COLLEGE, 66502

537-9030

46 M 4706 70 PD

RYAN, THOMAS F. 404 HUMBOLDT, 66502

776-5378

44 M 5101 70 GP

*SEXTON EXEC SEC. LETHA, RILEY COUNTY MED SOCIETY, 66502

776-3300

F

SINCLAIR, ROBERT E. LAFENE ST HEALTH CENTER, 66502

532-6544

24 M 3840 52 AOM

STEIN, ROBERT B. 2312 ANDERSON - SUITE 305, 66502

539-1851

29 M 3515 52 P

STONE, G REX. 1133 COLLEGE AVE, 66502

539-7555

29 M 1902 54 GS

TIEMANN, WILLIAM H. 1133 COLLEGE, 66502

532-6544

42 M 3005 67 FP

VOLKMANN II, HARLEY W. 1133 COLLEGE AVE, 66502

537-7641

47 M 1902 72 R

WHITE, THADDEUS H. 1735 ANDERSON AVE, 66502

-

15 M 1902 42 00

MANKATO—913 (Republic County Society)

KIMBALL, RICHARD R. 102 S CENTER, 66956

378-3511

45 M 1001 72 FP

SCHLOTTERBACK, WILLIAM E. PO BOX 193, 66956

378-3511

31 M 1902 61 FP

MARION—316 (Marion County Society)

ENSEY, T CRANFORD, 504 S ROOSEVELT, 66861

382-2182

20 M 4804 47 FP

GUERRA, TOMAS H. 122 S CEDAR, 66861

382-2137

33 M 84704 65 1M

MARYSVILLE—913 (Northeast Kansas Society)

ARGO, DONALD A. 808 N 19TH, 66508

562-2303

36 M 3005 64 FP

LAWS, LEWIS R. 808 N 19TH, 66508

443-3121

25 M 1902 54 FP

McLOUTH—913 (Jefferson County Society)

SNOOK, ROBERT RUFUS, 66054

796-6116

11 M 1902 42 FP

McPHERSON—316 (McPherson County Society)

BILLINGS, THOMAS. 400 WEST 4TH, 67460

241-5500

39 M 1902 66 FP

BRANDSTED, ERNEST C. 400 W 4TH, 67460

241-1654

18 M 1606 44 OBG

COLLIER, WILLIAM J. 400 W 4TH, 67460

241-1766

25 M 3605 49 TS

DYCK, ARTHUR H. 101 1/2 NORTH MAIN, 67460

241-0357

03 M 1902 28 FP

FERREE, RICHARD ALLAN. 400 W FOURTH, 67460

-

51 M 3006 76 FP

JOHNSON, J RICHARD. 400 W 4TH, 67460

241-4293

28 M 1902 55 1M

OUANO JR, BIBIANO B. MEMORIAL HOSP, 67460

241-2250

40 M 74801 63 U

PIERSON, W WEIR. 823 N MAIN, 67460

241-1445

17 M 1902 44 FP

PRICE, VAUGHAN C. 120 N ASH, 67460

241-1224

05 M 4706 29 GS

SOHLBERG JR, ROBERT. 116 N ASH, 67460

241-2321

05 M 1606 34 FP

THOMAS, GREGORY MCDUEEN. 400 W FOURTH, 67460

241-7400

47 M 1902 73 FP

MEADOE—316 (Iroquois County Society)

DAUGHERTY, ROBERT M. 631 E WALNUT, 67864

-

09 M 1902 36 FP

DONAHOE, DORVAL H. PO BOX 488, 67864

873-2181

32 M 05501 63 FP

HILL, RICHARD H. 234 EAST CARTHAGE, 67864

873-2113

18 M 1902 44 FP

MEDICINE LODGE—316 (Tri-County Society)

HOFFER, JOHN G. 604 N WALNUT, 67104

886-3222

13 M 1902 44 GS

STUCKY, DEAN E. 116 E KANSAS, 67104

886-5653

33 M 1902 60 FP

MINNEAPOLIS—913 (Saline County Society)

HUNNINGHAKE, RONALD E. 67467

-

WEDEL, KENNETH D. 311 N MILL ST, 67467

392-2144

32 M 1902 60 FP

WEDEL, KERMIT G. 311 N MILL ST, 67467

392-2144

32 M 1902 60 FP

MINNEOLA—316 (Iroquois County Society)

STEPHENS, CHARLES. MINNEOLA CLINIC, 67865

885-4202

33 M 2803 58 FP

TROTTER, ROGER COURTNEY, MINNEOLA CLINIC, 67865
885-4202
47 M 1902 74 FP

MORAN—316
(Allen County Society)

NEVITT, J RUSSELL, P D 80X 430, 66755
-
99 M 3510 32 DD

MOUNDRIDGE—316
(McPherson County Society)

KAUFMAN, WILLARD E, 115 N CHRISTIAN AVE, 67107
345-6322
28 M 1902 53 FP
LOGANBILL, VARDEN J, 115 N CHRISTIAN AVE, 67107
345-6322
26 M 1902 54 FP

MULVANE—316
(Sedgwick County Society)

COBB, LESLIE H, 102 E MAIN, 67110
777-1441
17 M 4804 47 FP

NASHVILLE—316
(Pratt-Kingman Society)

WAYLAN, THORNTON L, 67112
-
06 M 1902 35 DD

NEODESHA—316
(Southeast Kansas Society)

CHRONISTER, BERT, PO 8DX 118, 66757
325-2622
38 M 1902 64 FP
MODRHEAD JR, F ALLEN, 709 MAIN ST, 66757
325-2200
39 M 1902 65 FP

NESS CITY—913
(Central Kansas Society)

PRAKALAPAKORN, OARANEE, 412 N TOPEKA, 67560
798-2233
47 F 89101 69 PD
PRAKALAPAKORN, YANYONG, 412 N TOPEKA, 67560
798-2233
43 M 89101 69 GS
WIENS, PETER K, 8DX 8, 67560
798-3191
24 M 1902 55 FP

NEWTON—316
(Harvey County Society)

ALLEN, FRANCES A, 1112 8UYO, 67114
-
15 F 1902 43 DD
BENTON, JAY S, 301 MAIN, 67114
283-3600
23 M 4804 49 D8G
CAMPBELL, FRANCES S, 1901 E FIRST, 67114
283-2400
35 F 4101 61 P
CARPER, IVAN H, AXTELL CLINIC, 67114
283-2800
28 M 1902 59 GS
CARPER, DWEN E, AXTELL CLINIC, 67114
283-2800
37 M 1902 64 FP
CLAASSEN, MILTON A, 201 S PINE ST, 67114
283-3600
32 M 1902 58 DRS

CRAIG, CHARLES C, 203 E BROADWAY, 67114
283-2800
45 M 1902 71 DRS
CRANSTON, STEPHEN D, AXTEL CLINIC, 67114
283-2800
71 M 1902 71 GS
ENNS, EUGENE K, 6 INDIAN LANE, 67114
-
15 M 1902 40 DD
ENNS, JAMES H, 900 N POPLAR, 67114
283-1400
24 M 1902 47 DPH
FENT, LEE S, 316 DAK, 67114
283-0505
14 M 2834 43 GS
FRANSEN, HERBERT, 209 S PINE, 67114
283-5040
32 M 6501 60 GS
FRANSEN, PAUL H, 209 S PINE, 67114
283-5040
46 M 6501 71 FP
GLOVER, RICHARD M, 203 E BROADWAY, 67114
283-2800
21 M 1902 53 FP
GRISWOLD, DALE G, 203 E BROADWAY, 67114
283-2800
27 M 1902 53 IM
GROVE, JOHN A, AXTELL CLINIC, 67114
283-2800
08 M 1606 37 DRS
HWA, EUGENE C, 500 MAIN, 67114
283-1160
21 M 24216 47 R
ISAAC, CHARLES A, AXTELL CLINIC, 67114
283-2800
25 M 1902 49 U
KLASSEN, DANIEL S, 316 DAK, 67114
283-1313
13 M 1902 42 D8G
KLIEWER, VERNON L, PRAIRIE VIEW MHC, 67114
283-2400
31 M 1606 57 CP
KUMAR, SURINDER, 201 S PINE, 67114
835-2241
46 M 1902 69 D8G
MYERS, ROBERT W, RT 1, 67114
-
11 M 1902 43 DD
NACHTIGALL, ANDREW, 8ETHEL CLINIC, 67114
283-3600
28 M 1902 59 PD
O'TODDLE, JAMES K, PRAIRIE VIEW HOSPITAL, 67114
283-2400
28 M 1643 54 P
OLSDN, ERWIN T, 8ETHEL CLINIC, 67114
283-3600
19 M 1902 47 PD
PEDRAZA, HERNANDO V, 4 SYCAMORE CT, 67114
264-1381
28 M 26404 56 R
PREHEIM, OELBERT V, 209 S PINE, 67114
283-5040
13 M 702 42 IM
QAMAR, YUSUF, AXTELL CLINIC, 67114
283-2800
38 M 70409 62 IM
RADOVANDV, RADMILA, 500 MAIN, 67114
-
34 F 95702 60 R
RICH, ELOON S, 8ETHEL CLINIC, 67114
283-6000
16 M 1902 46 GYN
SCHMIDT, HERBERT R, CEDAR VILLAGE, 67114
-
03 M 1902 34 DD
SILLS, CHARLES T, AXTELL CLINIC, 67114
283-2800
09 M 1902 37 IM
SIMMONS, ROBERT EARLE, 209 S PINE, 67114
283-5040
49 M 1902 74 IM
TANODC JR, VALENTIN T, 8ETHEL CLINIC, 67114
283-3600
39 M 74809 62 U
TOMPKINS, CARL O, 316 DAK STREET, 67114
283-1380
22 M 1902 51 FP
VAUGHAN, DONNA A, 201 S PINE, 67114
283-3600
45 F 1902 71 IM
VOGT, VERNON W, 8ETHEL CLINIC, 67114
283-3600
22 M 3005 53 FP

VON GKASEMSIRI, SUNAN, 500 NORTH MAIN, 67114
 283-1160
 41 M 89101 67 R
 WEBER, ROY R, 209 S PINE, 67114
 283-5040
 46 M 1902 73 1M
 WIENS, J WENDELL, 201 S PINE, 67114
 283-3600
 32 M 1902 59 GS

NORTON—913
(Northwest Kansas Society)

COLIP, F MERLYNN, 711 N NORTON, 67654
 927-3305
 35 M 1902 61 FP
 COOPER, ARTHUR E, 305 W WILBERFORCE, 67654
 —
 08 M 1611 34 GP
 HARTMAN, ROGER L, 711 N NORTON, 67654
 927-3305
 35 M 1902 61 FP
 LONG, ROBERT C, 711 N NORTON, 67654
 927-3305
 27 M 1902 53 GS

NORTONVILLE—913
(Jefferson County Society)

MADISON, WILLARD A, 66060
 886-2110
 20 M 1902 51 FP

OAKLEY—913
(Northwest Kansas Society)

OHMART, RICHARD V, PO BOX 756, 67748
 672-3262
 36 M 1902 62 FP
 SEKAVEC, GORDON B, 209 CENTER AVE, 67748
 672-3351
 07 M 1902 38 FP

OBERLIN—913
(Northwest Kansas Society)

SIMPSON, ROBERT LIMBAUGH, OBERLIN CL, 67749
 475-2221
 25 M 4706 51 GS
 WHITAKER, REN R, OBERLIN CLINIC, 67749
 475-2222
 37 M 5404 66 FP

OLATHE—913
(Johnson County Society)

ARONOFF, MICHAEL E, 114 S CLAIRBORNE, 66061
 782-3953
 39 M 1604 64 ENT
 BARE II, CHARLES E, 540 E SANTA FE, 66061
 782-2020
 43 M 1902 69 U
 BEEBE, EDMER, 420 EAST CEDAR, 66061
 —
 03 M 5605 32 FP
 BLISS, JOY V, 42 HOLLY GREEN, 66061
 782-2292
 42 F 3005 68 ANES
 BROWN, PAUL W, 405 CLAIRBORNE, 66061
 782-3322
 44 M 1902 70 FP
 CHENOWETH, JOHN R, D.O., 1003 STRATFORD RD, 66061
 782-2442
 36 M 2878 70 OST
 DELPHIA, ROBERT E, 401 CLAIRBORNE, 66061
 782-1610
 24 M 1902 56 FP
 DOUGLAS, JOSEPH MAHLO, JOHNSON CO MENTAL HLTH CT, 66061
 782-2100
 39 M 1902 65 P
 EIDT, DAVID W, 407 CLAIRBORNE, 66061
 782-8487
 44 M 2501 70 FP

EIDT, LAURENCE A, 407 CLAIRBORNE, 66061
 782-8487
 44 M 1902 71 FP
 FORTUNE, CEDRIC B, 405 CLAIRBORNE, 66061
 782-3322
 40 M 1902 66 FP
 GLAZZARD, CHARLES D, 407 CLAIRBORNE, 66061
 782-3384
 28 M 2507 56 P
 HALVORSON, HOWARD C, 407 CLAIRBORNE, 66061
 782-2020
 41 M 5404 66 U
 HARNED, BERT W, 1065 WYCKFORD, 66061
 676-2479
 24 M 1606 47 ANES
 JENSEN, THOMAS M, 407 CLAIRBORNE, 66061
 782-1148
 47 M 3005 73 ORS
 LAIRD, DALE D, ONE PATRONS PLAZA, 66061
 782-3631
 42 M 1902 68 OPH
 MATTHEW, WILLIAM L, 405 CLAIRBORNE, 66061
 782-3322
 29 M 1902 56 FP
 MCCANN, WILLIAM E, 540 E SANTA FE, 66061
 782-0262
 22 M 3901 48 FP
 MEE, ADRIAN W, 28 HOLLY DRIVE, 66061
 782-2292
 19 M 1902 54 ANES
 MILLIGAN, DONALD B, 401 CLAIRBORNE, 66061
 782-1610
 48 M 2307 74 FP
 MORGAN II, DAVID LLOYD, 807 CLAIRBORNE, 66061
 782-8300
 49 M 2820 77 1M
 PIERRON, GEORGE J, 540 EAST SANTA FE, 66061
 782-0260
 22 M 1902 47 FP
 FINCOMB, ARTHUR L, 401 CLAIRBORNE, 66061
 782-1415
 20 M 1902 51 FP
 ROMONDO, STEVEN A, 300 SOUTH ROGERS RD, 66061
 782-2292
 47 M 1902 73 ANES
 RUHLEN, JAMES L, 807 CLAIRBORNE, 66061
 782-8300
 46 M 1902 72 1M
 SEAMAN, LAUREN I, 401 CLAIRBORNE, 66061
 782-1415
 07 M 6001 38 FP
 SETTLE JR, RUSSELL O, 407 CLAIRBORNE, 66061
 234-9566
 35 M 1902 60 P
 SHEFFER, KEITH D, 407 CLAIRBORNE SUITE 5, 66061
 782-1148
 37 M 1720 67 ORS
 SNYDER JR, RICHARD HENRY, 300 S ROGERS ROAD, 66061
 782-1451
 45 M 1902 73 ANES
 SOELONER, JAMES OLIVER, 405 CLAIRBORNE, 66061
 782-8600
 44 M 1902 70 FP
 STOPPLE, JOHN A, 405 CLAIRBORNE SUITE 4, 66061
 782-3073
 42 M 5605 69 ORG
 YEDMANS, RONALD N, 405 CLAIRBORNE SUITE 4, 66061
 782-3073
 40 M 1902 67 ORG

ONAGA—913
(Pottawatomie County Society)

WALSH, EUGENE A, 66521
 889-4241
 18 M 3006 42 FP
 WALSH, THOMAS E, ONAGA CLINIC, 66521
 889-4241
 48 M 1902 74 FP

OSAGE CITY—913
(Flint Hills Society)

WILLIAMS, HOMER J, 524 MARKET STREET, 66523
 528-3211
 05 M 1902 31 FP

OSAWATOMIE—913
(Miami County Society)

APPENFELLER, WILLIAM O. 524 BROWN AVE.66064
755-3166
25 M 1902 53 FP
MORALES, AMALIA O. P O BOX 500.66064
755-3151
22 F 21501 50 ADM
MORALES, OTTO E. P O BOX 500.66064
755-3151
22 M 27501 51
QUINONES, ELADIO A. OSAWATOMIE STATE HOSP.66064
755-3151
16 M 27501 43 FP

OSWEGO—316
(Labette County Society)

BURGESS, ARTHUR P. 504 5TH STREET.67356
795-4427
19 M 1902 52 FP

OTTAWA—913
(Franklin County Society)

GOLLIER, ROBERT A. MED ARTS BLDG.66067
-
13 M 1902 37 00
GOLLIER II, ROBERT A. MEDICAL ARTS BLDG.66067
242-1620
40 M 1902 66 FP
HADLEY, DELMONT C. 1320 SOUTH ASH.66067
242-3891
35 M 1902 64 FP
HENNING, CALVIN W. 1502 CEDAR.66067
242-2641
05 M 1902 35 FP
LAURY, DAVID G. 1320 S ASH.66067
242-1620
17 M 1606 44 FP
LOFGREEN, VICTOR J. ROUTE #1.66067
-
97 M 1902 32 00
PHILGREEN, DONALD E. 1320 S ASH.66067
242-3891
39 M 1602 67 FP
REYES JR, FRANCISCO A. 1320 S ASH.66067
242-5312
38 M 74801 61 GS
SAYLOR, STEPHEN. 1320 ASH.66067
242-1620
47 M 1902 73 FP
SPEER, LOUIS N. PO BOX D.66067
242-1257
14 M 1606 41 FP
STREHLOW, CHESTER H. MEDICAL ARTS BUILDING.66067
242-3891
30 M 1902 57 FP

OVERBROOK—913
(Shawnee County Society)

RUBLE JR, JAMES L. OVERBROOK COMM CLINIC.66524
665-2205
26 M 1902 53 FP

PAOLA—913
(Miami County Society)

BANKS, ROBERT E. PO BOX 29B.66071
294-2305
29 M 1902 55 FP
NAIK, GOPAL V. 700 BAPTISTE DR.66071
294-5316
46 M 49501 71 OBG
ROWLETT, JACK G. PO DRAWER A.66071
294-2356
21 M 1902 52 FP
STANLEY, REX C. PO DRAWER A.66071
294-2356
24 M 1902 52 GS

PARSONS—316
(Labette County Society)

AVES, AGNES. 1509 MAIN.67357
421-0600
38 F 74801 59 1M

AVES, RENATO B. 1509 MAIN STREET.67357
421-0600
35 M 74801 59 GS
BAIR, HOWARD V. 2601 GABRIEL.67357
421-6550
18 M 1902 43 P
BORKLUND, MAURICE K. 400 KATY.67357
421-2700
21 M 1720 50 GS
CRAMER, GUY W. 412 MURDOCK.67357
-
11 M 1902 39 00
DE BRIERE, SIDNEY L. BOX 73B.67357
421-6550
19 M 702 52 PD
HENDERSON, CHARLES F. 1509 MAIN.67357
421-0600
14 M 1902 40 A
LAVA, CHIRUND. 107 MAIN PO BOX 290.67357
421-6210
40 M B9102 63 GS
LIUJULUSCHAN, RIT. 107 MAIN.67357
421-6210
41 M B9101 68 GS
MARTIN, EARL A. 1516 GRAND.67357
-
07 M 1606 35 00
MILLER, CHARLES H. 2819 CLARK.67357
-
07 M 3006 32 00
MILLER, DEAN M. 203 CRESTVIEW.67357
421-4880
22 M 1902 48 R
PACE, JOHN O. KATY HOSPITAL CLINIC.67357
421-1010
94 M 1902 20 FP
PARANJOTH1, SUBRAMONIAM P. 1509 MAIN.67357
421-6160
39 M 49531 64 1M
PAULS, DANIEL N. 2600 CORNING.67357
421-1431
45 M 1902 71 1M
ROJAN, CHAVALIT. 310 N 16TH.67357
421-2460
47 M B9102 72 PD
ROTHSTEIN, TERRY B. 220 NORTH 32ND.67357
421-5900
43 M 1606 69 OPH
SWARTZ, WARREN E. 400 KATY AVE.67357
421-2700
25 M 1902 52 GS
TANGCHUPONG, CHANTRASIRI. 310 N 16TH.67357
421-2460
47 F B9102 71 PD
TANGCHUPONG, SAROH0. 310 N 16TH.67357
421-2460
43 M B9102 69 OBG
VERMA, ASHA. 400 KATY.67357
421-2700
37 F 49530 63 PD
WHITE, JOHN P. PARSONS CLINIC.67357
421-0600
17 M 1902 42 FP

PITTSBURG—316
(Crawford County Society)

ARMSTRONG, HAROLD J. PROFESSIONAL BUILDING.66762
232-2600
40 M 1902 68 ORS
BENA, JAMES H. 109 EAST 9TH.66762
231-6950
12 M 3005 36 PD
BERKEY, VERNON A. KIRKWOOD BLDG.66762
231-7650
18 M 1902 43 R
BIERLEIN, KENNETH J. B12 S CATALPA.66762
-
06 M 1606 33 00
CARSON, RICHARD CARLYLE. MT CARMEL HOSPITAL.66762
231-6100
35 M 1720 63 ANES
COOMER, TYLER E. 315 NATL BANK BLDG.66762
231-7730
30 M 2101 59 GS
COOPER, KENT J. 230B TUCKER TERR.66762
231-6280
41 M 1902 73 FP
*ORENICK, FRANCES EXEC SE. CRAWFORD CO MEDICAL SOC.67762
231-5130
F
ERICKSON, CLARENCE W. 217 NATL BANK BUILDING.66762
231-7400
06 M 1902 33 1M

ESCH, JOHN G. 207 KIRKWOOD BLDG.66762
 231-5360
 24 M 3006 48 GS
 GOMEZ, MODESTO S. 909 E CENTENNIAL.66762
 231-2490
 35 M 72601 63 PO
 HOLSINGER, DONALD M. 1015 MT CARMEL PL.66762
 231-5900
 38 M 1902 64 IM
 HUEBNER, ROBERT STEPHAN, NATIONAL BANK BLDG.66762
 231-6160
 42 M 1606 67 GS
 HUERTER, DAVIO F. 909 CENTENNIAL.66762
 231-1650
 46 M 1902 72 IM
 LANCE, RAYMOND W. 608 W QUINCY.66762
 -
 22 M 1902 47 OO
 LEFFLER, PAUL B. 309 WINWOOD.66762
 -
 02 M 1902 40 OO
 LYONS, DAVE J. 107 W 4TH.66762
 231-5160
 07 M 2834 30 FP
 MCKEE, DICK B. 1500 S COLLEGE.66762
 231-6220
 96 M 1902 28 FP
 MILLER, EARL E. 1312 S BROADWAY.66762
 231-6410
 13 M 1902 37 ENT
 MULLER, SAMUEL B. 611 W QUINCY.66762
 -
 05 M 1902 34 OO
 NEIGHBOR, ERNEST H. 909 CENTENNIAL B2.66762
 232-1600
 40 M 1902 66 ORS
 NEWMAN, CLIFFORD B. 1204 E 7TH.66762
 231-2210
 01 M 1902 28 FP
 DOGERS, ROONEY K. 909 CENTENNIAL.66762
 231-4300
 M 1902 74 IM
 PARS1, MANUTCHEHR K. 909 CENTENNIAL.66762
 231-3770
 38 M 51701 64 OBG
 POGSON, GEORGE W. 1015 MT CARMEL PLACE.66762
 231-5900
 24 M 1902 47 IM
 RAMIREZ, AUGUSTO H. 909 CENTENNIAL.66762
 231-1600
 32 M 26407 58 IM
 RAMIREZ, IRENE. 909 CENTENNIAL.66762
 231-1600
 F
 SCHLEMMER, ROGER B. 1009 S BROADWAY.66762
 231-6380
 37 M 1902 68 OPH
 TWEET, FREDERICK A. MT CARMEL HOSPITAL.66762
 231-6100
 39 M 1602 66 PATH
 WOOD, DOUGLAS H. 413 W JEFFERSON.66762
 -
 11 M 5605 36 OO
 YAGHMOUR, TALAAT E. 905 NORTH LOCUST.66762
 231-0850
 40 M 33002 64 U
 ZABEL, KENNETH P. 909 CENTENNIAL.66762
 231-1650
 37 M 1902 65 IM

PLAINVILLE—913
(Central Kansas Society)

PAGE, O VALE. 409 S COCHRAN ST.67663
 434-4609
 20 M 1902 51 FP
 PEDERSON, ARNOLD M. PLAINVILLE CLINIC.67663
 434-4609
 22 M 1902 51 FP

PLEASANTON—913
(Bourbon County Society)

JUSTUS, WILLIAM J. .66075
 352-6134
 29 M 1902 55 FP

PRATT—316
(Pratt-Kingman Society)

AMBLER, CARL O. 200 COMMODORE.67124
 -
 31 M 1902 57 R
 BARKER, PATRICK N. 420 COUNTRY CLUB RD.67124
 672-7411
 45 M 1902 71 GS
 BLACK, CYRIL V. 223 E 4TH.67124
 672-6403
 05 M 4802 30 GS
 CLARK, ROBERT THOMAS. 420 COUNTRY CLUB RD.67124
 672-7411
 43 M 401 70 PD
 FILLEY, VERNON W. 310 E 2ND.67124
 672-5555
 13 M 3005 43 GS
 FREEMAN, F GILES. 310 E 2ND.67124
 672-5555
 18 M 1902 44 FP
 JACKS, J WARREN. 602 E 2ND.67124
 672-5559
 23 M 1902 48 FP
 PITMAN, WILL O. 717 WEST 3RD.67124
 -
 98 M 1902 25 OO
 QUENZER, RONALD W. 420 COUNTRY CLUB RD.67124
 672-7411
 46 M 1601 73 IM
 SIBALA, JUSTO L. PRATT MEDICAL CLINIC.67124
 -
 20 M 74802 49 R
 THOMAS, R CULLEN. 420 COUNTRY CLUB RD.67124
 672-7411
 47 M 1902 72 GS
 THORPE, FRANCIS A. 310 E 2ND.67124
 672-5555
 08 M 1606 35 FP
 WOLFF, FREDERICK P. 223 E 4TH.67124
 672-6403
 20 M 1902 44 IM

PROTECTION—316
(Iroquois County Society)

GLENN, LYLE G. 146 BROADWAY BOX 447.67127
 622-4686
 12 M 1606 40 FP

QUINTER—913
(Northwest Kansas Society)

GUNTER, CARL C. QUINTER CLINIC BLDG.67752
 754-3333
 20 M 1902 51 FP
 HIESTERMAN, HERMAN W. QUINTER CLINIC BLDG.67752
 754-3333
 23 M 1902 51 FP

RANSOM—913
(Central Kansas Society)

MCLAIN, KENNETH. BOX 247.67572
 731-2295
 21 M 1902 46 FP

RILEY—913
(Riley County Society)

OLTMAN, THEODORE V. RR 1 BOX 145B.66531
 485-2549
 00 M 1601 29 FP

RUSSELL—913
(Central Kansas Society)

MERKEL, EARL O. SHIELDS BLDG.67665
 483-2178
 32 M 1902 57 FP
 PANICHABONGSE, SAMBUNOH. 213 WEST 7TH.67665
 483-2178
 43 M 89101 67 GS

PETTIJOHN, WALTER J. 624 W 12TH, 67665

12 M 1902 37 00
 STARKEY, JERALO L. SHIELDS BUILDING, 67665
 483-2178
 30 M 1902 56 FP
 SWANN, CLAIR L. 112 W 7TH, 67665
 483-4212
 13 M 1902 39 1M
 WHITE, FAGAN N. 356 W 5TH, 67665
 -
 11 M 702 36 00

SABETHA—913
(Northeast Kansas Society)

BROWN, VIRGIL E. 1018 MAIN ST, 66534
 284-2141
 06 M 1902 37 FP
 MONTGOMERY, THOMAS ALLEN, 1018 MAIN ST, 66534
 284-2141
 10 M 1902 49 FP

SALINA—913
(Saline County Society)

ALLEN, MONTE L. 600 S SANTA FE, 67401
 827-0307
 36 M 1902 61 0T0
 ANDERSON, JOOY, 737 E CRAWFORD, 67401
 827-7261
 32 F 1902 59 1M
 BAXTER, W REESE, P O BOX 1707, 67401
 825-8221
 47 M 1902 73 FP
 BROWN, ROBERT WAYNE, PO BOX 26, 67401
 827-5591
 23 M 1902 55 1M
 BRUMMETT, RICHARD R, P O BOX 1707, 67401
 825-8221
 34 M 1902 64 FP
 BRUNGARDT, BERNARD A. 400 E BELLOIT, 67401
 827-4433
 21 M 3006 46 ANES
 CALDERWOOD, WILLIAM A, PO BOX 918, 67401
 827-9631
 41 M 1902 68 FP
 COFFEY, ROY B. 671 ELMORE DRIVE, 67401
 823-6397
 24 M 1902 47 ORS
 CONNELLY, MAURICE R, 539 S SANTA FE, 67401
 827-0268
 12 M 2002 38 G5
 COVERT, THOMAS J. PO BOX 360, 67401
 827-7261
 45 M 1902 71 PO
 CULTRON, FRANK T. 800 E CRAWFORD, 67401
 823-8151
 10 M 1643 38 OPH
 O'SOUZA, BISMARCK C. 116-A S 7TH, 67401
 827-9526
 45 M 49501 67 R
 ODWELL, JAMES C. 645 E IRON, 67401
 827-7255
 26 M 1611 49 1M
 ORAEMEL, H RICHARD, 600 S SANTA FE ST, 67401
 827-0307
 18 M 1902 53 0T0
 OREHER, HENRY S. 737 E CRAWFORD, 67401
 827-7261
 18 M 1902 43 1M
 EATON, GLEN E. RFD 3 - BOX 94 B, 67401
 827-3064
 28 M 1902 54 ANES
 EATON, LESLIE F. RR 1 BOX 75, 67401
 827-7261
 06 M 1902 32 G5
 ELLISON, PAUL O. 1499 E IRON, 67401
 825-7271
 35 M 2105 60 OPH
 FORSTER JR, LOUIS G. P O BOX 1707, 67401
 825-8221
 47 M 1902 73 FP
 FREEMAN, RAYMOND S. 737 E CRAWFORD, 67401
 827-7261
 20 M 702 50 PO
 GANS, FREDERICK A. 737 E CRAWFORD, 67401
 227-7261
 22 M 2834 46 PO

GRIFFING, RICHARD B. 1941C GLENDALE RD, 67401

825-9091
 27 M 1902 53 ANES
 GRIFFITH, FRANK H. 1493 E IRON, 67401
 827-0488
 45 M 4813 75 OPH
 GUNN, MARVIN R. PO BOX 1059, 67401
 827-9526
 28 M 3901 54 R
 GUZMAN, MANUEL. CKMHC, 67401
 823-6322
 27 M 64901 54 P
 HARRIS, NORMAN R. 430 S 7TH, 67401
 825-8191
 30 M 1902 59 OBG
 HATTON, LLOYD W. 617C UNITED BLOG, 67401
 827-6256
 06 M 1902 33 P
 HESSE, FREDERICK J. PO BOX 918, 67401
 827-9631
 50 M 1902 75 1M
 HOOGE5, MERLE A. 430 S 7TH ST, 67401
 825-8191
 34 M 1902 58 OBG
 HOLMAN, JON B. PO BOX 61, 67401
 827-9366
 33 M 1902 63 P
 JACKSON JR, DELMAS A. 645 E IRON, 67401
 827-7255
 35 M 2101 60 1M
 JENKINS, NEAL M. 135 E CLAFLIN, 67401
 827-9631
 19 M 1902 49 1M
 KREHBIEL, MARK A. 511 BEECHWOOD RD, 67401
 825-8227
 49 M 1902 74 FP
 KRUCKEMYER, ALAN L. 645 E IRON, 67401
 823-2215
 45 M 1103 71 ORS
 LAKE, MAX S. 600 S SANTA FE, 67401
 827-0307
 19 M 3005 43 OPH
 LASLEY, DAVIO A. 645 E IRON, 67401
 827-9635
 22 M 1606 47 U
 LIVINGSTON, CHARLES E. PO BOX 918, 67401
 827-9631
 32 M 1611 57 G5
 LUNGSTRUM, JACK E. PO BOX 1346, 67401
 823-2215
 21 M 1902 59 ORS
 MACY, NORMAN E. RR 3 BOX 37A, 67401
 827-4053
 35 M 1902 60 PATH
 MACY, TED L. PO BOX 360, 67401
 827-7261
 43 M 1902 71 G5
 MARCHBANKS, DONALD L. 520 COUNTRY CLUB RD, 67401
 823-2380
 24 M 1902 51 FP
 MARSHALL, GEORGE W. PO BOX 1705, 67401
 225-3191
 44 M 1902 70 OBG
 MARTIN, OLIVER L. 715 E REPUBLIC, 67401
 827-9631
 08 M 1902 37 OBG
 MATHIS, JERRY L. 1112 ALBERT, 67401
 827-9343
 35 M 1902 62 POA
 MAXWELL, GORDON E. 135 E CLAFLIN, 67401
 827-9631
 29 M 1902 55 OBG
 MCCRAE, SPENCER C. 519 S SANTA FE, 67401
 827-4424
 18 M 3509 43 ORS
 MILLER, ELOEN V. 192B RIOGELEA, 67401
 827-3061
 19 M 1902 44 ANES
 MITCHELL, JOHN C. 617 UNITED BLOG, 67401
 827-3061
 13 M 1902 38 G5
 MOWERY, WILLIAM E. 737 E CRAWFORD, 67401
 823-6455
 23 M 1902 47 G5
 NICKELL, WAITSTILL B. 617 UNITED BLOG, 67401
 827-9618
 24 F 1606 50 ANES
 NICKELL, WENDELL K. 617 UNITED BLOG, 67401
 827-9618
 26 M 71606 50 TS
 NULL, WILLIAM G. 135 E CLAFLIN, 67401
 827-9631
 31 M 102 57 PO

DBANDD, GUILLERMO, 2110 KNDLLCREST DR, 67401

823-6219

35 M 26404 62 R

PALMER, GERALD K, 1952 RIDGLEA RD, 67401

-

24 M 1803 53 PATH

RASSA, REZA P, 204 SEITZ DRIVE, 67401

827-A411

33 M 51701 59 R

REECE, RICHARD J, PD BDX 1059, 67401

827-9526

23 M 1902 A9 R

RDDRICK, JAMES E, 645 E IRDN, 67401

827-9635

23 M 1902 47 U

RDMEISER, REX S, 645 E IRDN, 67401

827-9635

41 M 1902 67 U

RUEB, ANDREW E, 11 CRESTVIEW DR, 67401

827-6691

11 M 1606 35 GS

SCHMIDT, RAMON WARNER, PD BDX 1688, 67401

827-9618

39 M 1902 65 GS

SCOTT, CHESTER E, 519 S SANTA FE, 67401

827-5549

23 M 1902 51 FP

SEBREE, STEVEN G, PD BDX 360, 67401

827-7261

47 M 1902 73 DBG

SIMPSON, J COLBERT, 308 WEST SOUTH, 67401

-

07 M 3006 38 DD

SLDO, MILO G, PD BDX 1346, 67401

823-2215

41 M 1902 67 DRS

SMITH, BDOYD E, BDX 1285, 67401

827-4053

46 M 3005 72 PATH

SMITH, HARDLO R, PD BDX 360, 67401

827-7261

19 M 1902 51 GS

*SMITH, LARRY M EXEC SE, SALINE CO MEDICAL SOC, 67401

825-9348

M

TAYLOR, THOMAS F, 430 S OHIO, 67401

827-0346

26 M 1902 53 FP

TUCKER, DONALD R, 644 S OHIO, 67401

825-6797

31 M 1902 57 IM

WAGENBLAST, HOWARD R, 737 E CRAWFORD, 67401

827-7261

21 M 1902 49 FP

WATERS, CLARENCE N, 530 S 5TH, 67401

823-6A97

13 M 2834 48 D

WEBER, CLARENCE J, 156 DVERHILL RD, 67401

-

00 M 1902 39 DD

WEBER, ROBERT W, 645 E IRON, 67401

827-7255

26 M 1902 49 IM

WEBER II, RALPH H, 737 E CRAWFORD, 67401

827-7261

A4 M 3005 75 PD

SATANTA—316*(Southwest Kansas Society)*

TADURAN, VIRGILIO, MANGMANG, 67870

649-2771

43 M 74810 69 PATH

SCOTT CITY—316*(Southwest Kansas Society)*

ARRDYO, ZEFERINO, SCOTT CITY CLINIC, 67871

877-2187

M 74802 GS

FIELDG, GALEN W, 202 COLLEGE, 67871

872-2187

15 M 1902 49 FP

HOPKINS JR, B MORRISON, PD BDX 97, 67871

872-2187

23 M 1902 53 FP

SEDAN—316*(Southeast Kansas Society)*

LIM, CARLO, 111 E CHEROKEE, 67361

725-3171

44 M 74801 70 IM

TAYLOR, ELMER W, 120 WEST DSAGE, 67361

725-3141

28 M 512 57 FP

WALKER, WILLIAM K, 111 E CHEROKEE, 67361

725-3171

18 M 1902 45 FP

SENECA—913*(Northeast Kansas Society)*

BERKLEY, NDRMAN W, 15 SOUTH 5TH ST, 66538

336-2128

31 M 1902 63 FP

GILBERT, J HOWARD, BDX 149, 66538

336-241A

05 M 1902 41 FP

SHARON SPRINGS—913*(Northwest Kansas Society)*

CHUNG, JOHN J, WALLACE CO MED CLINIC, 67758

852-421A

23 M 58301 48 FP

SHAWNEE MISSION—913*(Johnson County Society)*

ALLEN JR, LEWIS G, 7301 MISSION RD SUITE 300, 66208

362-2222

21 M 1902 45 R

ALLEN JR, WILLIAM R, 6734 GRANADA RD, 66208

8 -

46 M 1902

ALTENBERND, ELVIN CONRAD, 7319 W 81ST, 66204

648-2010

26 M 1902 54 FP

ALVAREZ, LUIS A, 8100 MARTY, 66204

649-3A00

32 M 64914 61 FP

ARMBRUSTER, ALBERT A, 9119 WEST 74TH SUITE 202, 66204

362-9220

17 M 512 55 GS

ATHDN, MERRILL O, 8501 DELMAR, 66207

642-4242

24 M 1902 54 FP

RADEEN, LDUIS JOHN, 10550 QUIVIRA RD, 64215

492-6200

49 M 2820 74 DPH

BAEKE, JOHN O, 6806 WEST 83RD, 66204

642-4242

19 M 1902 52 FP

BALANDFF, ARNOLD Z, 4601 W 109TH SUITE 122, 66211

642-4040

42 M 1803 67 PD

BANSAL, SATISH C, 6100 MARTWAY, 66202

384-2220

38 M 49541 61 DRS

BARKER, ELIZABETH R, 4121 WEST 83RD SUITE 123, 66208

381-6669

30 F 4706 55 P

BARKER, JAMES BERTON, 8901 W 74TH, 66204

381-3338

31 M 4706 55 DTD

BARNHART, DONALD J, 9119 WEST 74TH, 66204

831-2334

41 M 2501 68 DBG

BARR, RICHARD N, 7301 MISSION ROAD, 66208

432-4366

32 M 1902 57 DPH

BARRICK, BRUCE, SH MISSION MEDICAL CENTER, 66201

676-2340

39 M 1902 65 PATH

BATTY, THOMAS V, 5555 W 58TH, 66202

432-2080

21 M 3806 54 FP

BELL, OELORIS J, 4601 WEST 109TH SUITE 104, 66211

341-6550

42 F 1902 68 DPH

BELZER, EDWARD G, 4601 WEST 109TH SUITE 110, 66211

381-8282

36 M 3005 58 PD

*BENNETT EXEC SE, ALLIENE, JOHNSON CO MEDICAL SOC, 66208

432-9444

F

BIKALES, VICTOR WILLIAM, 7301 MISSION RD, 66208

384-1311

13 M 2105 38 P

BISHOP, FRANCIS F, 7501 MISSION ROAD, 66208

648-3533

20 M 1902 45 P

BLETZ, DONALD B. 10550 QUIVIRA RD/5TH FL.66215

492-6200

28 M 5104 58 1M

BOLES, J MICHAEL, 5949 NIEMAN ROAD.66203

631-1300

35 M 1902 61 FP

BRAVERMAN, DAVID ELLIOTT, 4601 W 109.66206

341-1101

47 M 2507 72 PDD

BRIDGENS, JAMES G. SH MISSION MEDICAL CENTER.66201

676-2340

22 M 1902 47 PATH

BROWN, WILLIAM R. 7301 MISSION RD.66208

236-8866

23 M 1902 48 1M

BURGER, PAUL B. 5638 NIEMAN ROAD.66203

631-6114

25 M 2834 50 FP

BURKET JR, GEORGE E. 2012 CONDOLEN DR.66209

-

12 M 1902 37 DD

CAIN, IVAN W. 4140 W 71ST ST.66208

362-7811

18 M 1902 44 ORS

CALKINS, LARRY L. JOHNSON CO NATL BK BLDG.66207

649-0110

18 M 1902 43 DPH

CARDUFF, JAY J. 6300 GLENWOOD.66202

432-4480

25 M 3006 54 FP

CAREY, LARRY J. 2624 WEST 77TH.66208

-

51 M 1902 *

CARRASCO, LENDR C. 8901 W 74TH.66204

262-4220

41 F 74801 63 A

CAUGHRON, MICHAEL ROBERT, 5105 NEDSHO.66205

-

49 M 1902 74 PATH

CAVITT, ROBERT F. 9119 WEST 74TH.66204

831-0700

24 M 1902 48 GS

CEDERLIND, CRANSTON JAY, 8901 W 74TH #248.66204

341-4343

45 M 1902 71 ORG

CHANG, SHU FANG, 10200 W 75TH.66204

432-7885

25 F 24239 49 P

COE, RICHARD D. 7301 MISSION RD.66208

362-8505

31 M 4804 56 DPH

COHEN, ROBERT A. 3700 W 83RD.66208

642-2100

39 M 2803 64 PD

COOPER, JACK R. 7301 MISSION RD.66208

432-6300

17 M 3840 43 NS

CORBIN, MURRAY D. 10550 QUIVIRA RD-5TH FL.66215

492-6200

39 M 1902 65 1M

CORDELL, LARRY D. 7301 MISSION RD.66208

362-8317

41 M 1902 67 ORS

COUTLER, HENRY F. 5829 WOODSON PO BOX 975.66201

722-1100

23 M 1902 51 FP

COX JR, IRA, 5829 WOODSON PO BOX 975.66201

722-1100

19 M 1902 49 FP

CURRAN, KEVIN E. 4121 W 83RD.66208

649-9383

39 M 2803 65 OPH

DAVIS, RICHARD E. 10955 GRANADA LN.66211

561-2025

26 M 1902 54 P

DELP, MAHLON H. 6131 TERRYDALE RD.66203

-

03 M 1902 34 1M

DENISON, TERRY R. 5829 WOODSON ROAD.66202

722-1106

29 M 1902 56 PD

DERRINGTON, KENNETH L. FOX HILL MED BLDG.66211

341-3535

44 M 1902 71 FP

DOCKHORN, ROBERT J. 5300 W 94TH TERR.66207

381-4674

34 M 1902 60 POA

DOHERTY, WILLIAM R. 7600 STATE LINE.66208

649-3900

20 M 3006 56 FP

DUCKETT II, THOMAS G. 4601 W 109TH.66211

648-1022

41 M 1902 67 OPH

EIKERMANN, WILLIAM C. 9400 MISSION RD.66206

642-5184

42 M 1902 69 P

ENDERS, WRAY, 9034 COTTONWOOD DR.66215

-

02 M 1902 36 ANES

ESRIG, HAROLD L. D.O., 8132 SAGAMORE.66206

381-5033

30 M 2878 60 ANES

ETZENHOUSER III, RUSSELL D. P O BOX 7426.66207

381-8282

34 M 1902 59 PD

EVANS JR, WILLIAM E. 8741 HIGH DRIVE.66206

362-7363

24 M 1902 58 FP

FORDYCE, NORMAN, 8901 W 74TH.66204

722-0020

41 M 1902 67 DTD

FRANCISCO, CLARENCE L. 3509 W 85TH.66206

371-6802

09 M 1902 34 ORS

FULLEN, JERYL G. PO BOX 4010.66204

831-3500

43 M 401 68 ORS

GARDNER, GLENN M. 5200 WEST 64TH.66208

-

35 M 2803 60 1M

GENTRY, KALE C. 5105 W 84TH.66207

632-4242

31 M 1902 60 FP

GILBERT, ROBERTA M. GEORGETOWN MEDICAL BLDG.66204

341-1234

35 F 3506 62 P

GILLEN, BILLY A. 8802 BIRCH LANE.66207

-

29 M 1902 54 ANES

GOLLERKERI, MOHAN P. 7301 MISSION RD STE 339.66208

236-8866

30 M 49516 52 HEM

GOMEZ, FRANCISCO, 4200 SOMERSET #160.66208

649-7300

15 M 26401 43 P

GOOD, WENDELL LISLE, 4601 W 109TH.66211

649-3883

24 M 1902 48 FP

HAAE, JUDITH S. 5200 W 67TH.66208

588-7350

45 F 1902 71 RO

HACKER, DAVID CHARLES, 5916 MISSION RD.66205

588-6670

50 M 1902 75 ANES

HAMIL, LAWRENCE W. 10550 QUIVIRA RD.66215

649-6722

36 M 2803 61 PD

HARD, BENJAMIN F. 7301 MISSION RD.66208

362-2340

28 M 4802 55 ORG

HARMS, ALBERT C. 5750 WEST 95TH.66207

381-5550

13 M 1902 38 FP

HARPSTER, GENE D. 4601 W 109TH.66211

648-1400

31 M 1902 57 GS

HARTONG, WILLIAM ALLEN, 9119 W 74TH.66204

831-9300

44 M 1902 71 1M

HASTINGS, MARY T. 2520 W 50TH PL.66205

-

45 F 1902 77 D

HATHAWAY, PETER, 11055 CEDAR STE 216.66211

588-6043

31 M 3503 60 1M

HERZON, CHARLES D. 8951 W 75TH.66204

649-9010

39 M 3006 65 ORG

HESSER, HERBERT H. 7207 EDGEWOOD BLVD.66203

-

06 M 1902 34 DD

HOBSON, MILBURN W. 9119 W 74TH ST.66204

831-2334

30 M 1902 55 ORG

HODES, HERBERT C. 5007 W 112TH.66211

381-6868

43 M 1902 69 ORG

HODGES, BRUCE E. PD BOX 5355.66215

888-0777

32 M 1902 63 FP

HOPKINS, WILLIAM D. 10000 W 75TH.66204

831-3500

33 M 2803 61 ORS

HOPKINS JR, LENLY T. 8600 W 95TH ST.66212

649-7844

30 M 3841 56 GS

HORSEMAN, ROBERT F. 9119 W 74TH ST.66204

432-7419

19 M 1902 44 ORG

HYLWA, THEODORE M. 10460 MASTIN.66212

492-3266

43 M 1902 69 PS

106 (SHAWNEE MISSION)

ITURRALOE, GEORGE, 7501 MISSION RD,66208

648-4949

21 M 13201 49 P

JANES, DONALD R, 10550 QUIVIRA #360,66211

381-6144

34 M 1902 60 OBG

JAYARAM, MARANDAPALLI R, 10550 QUIVIRA RD-5TH FL,66215

492-6200

42 M 49509 65 PD

JONES, CHARLES E, SHAWNEE MISSION MED CNTR,66201

676-2214

31 M 1902 60 FP

JONES, H IVOR, 8901 W 74TH SUITE 269,66204

362-4040

24 M 80303 51 P

JOUVENAT, NEIL C, 10550 QUIVIRA - SUITE 102,66215

492-1844

43 M 3005 71 OBG

KADIAN, RAJESH S, 10550 QUIVIRA 5TH FLOOR,66202

362-7290

50 M 71 IM

KAGAN, STUART M, 10550 QUIVIRA - SUITE 340,66215

492-1111

44 M 4901 69 PD

KASHYAP, BANSHI PRASAD, 7301 MISSION RD,66208

236-4500

47 M 49554 69 IM

KENNEDY, KENNETH R, 6100 MARTWAY STE 11,66202

432-0126

24 M 1902 53 FP

KETCHUM, LYNN D, 310 PROFESSIONAL BLDG,66215

492-3737

36 M 2101 60 PS

KHURANA, SATISH K, 9119 W 74TH,66204

432-3334

41 M 49536 65 PD

KIMURA, CHARLES C, 8901 W 74TH,66204

262-4220

25 M 2101 56 A

KOZIKOWSKI, BEN M, 7301 MISSION RD,66208

362-8317

30 M 2834 55 ORS

KRUEGER, KURT ALLEN, SHAWNEE MISSION MED CNTR,66201

676-2479

48 M 3006 74 ANES

KURTH, ROBERT H, 5555 W 58TH,66202

432-2080

28 M 3005 53 IM

LAPI, RUTH M, 2012 STRATFORD RD,66208

-

14 F 4107 37 OD

LEATHERS III, MOLLIS K, SHAWNEE MISSION MED CNTR,66201

676-2340

38 M 3901 64 PATH

LEGASPI JR, PEDRO L, SHAWNEE MISSION MED CNTR,66201

831-8592

36 M 74801 60 ANES

LEIGH, LAWRENCE E, 8020 SANTA FE DR,66204

642-4080

12 M 1902 41 FP

LEWIN, WALTER, 8901 W 74TH ST,66204

362-4040

30 M 1902 56 P

LEWIS, JAMES E, 3700 W 83RD SUITE 203,66208

649-0923

37 M 2101 63 P

LIPSEY, JAMES H, 10000 W 75TH SUITE 103,66204

831-3500

31 M 1606 56 ORS

LULO, ANTONIO R, 7600 STATE LN,66208

649-3900

35 M 30801 60 IM

MALLORY, JOHN A, 10550 QUIVIRA 5TH FLOOR,66215

362-7290

43 M 2803 71 IM

MANLEY, JOSEPH W, 4601 W 109TH SUITE 306,66211

381-8838

42 M 1902 69 OBG

MANTZ, FRANK A, 9309 W 103RD,66212

588-7099

12 M 4101 38 OD

MASER, GEORGE R, 5811 NALL,66202

432-5515

12 M 1902 36 FP

MATHEWS, ROBERT MAJOR, 7301 MISSION RD,66208

362-6888

25 M 1902 54 GS

MAXWELL, ROBERT A, 8901 W 74TH - SUITE 150,66204

362-1660

46 M 1902 73 PD

MCCAUGHEY, HUGH W, 11055 CEDAR SUITE 210,66211

381-1724

28 M 1902 53 IM

MCGURK, THOMAS E, 4601 W 109 SUITE 206,66211

649-2080

39 M 2803 65 P

MCEACHEN, WILLIAM H, 3700 WEST 83RD SUITE 102,66208

649-3335

32 M 1902 59 PD

MCWHERTER, LOTTIE B, 5920 NALL SUITE 308,66202

362-1464

30 F 1902 57 IE

MELENDRES, JUANITO M, 8971 W 75TH,66204

341-2000

36 M 74809 61 PD

MELIA JR, B JAMES, 3700 W 83RD,66208

648-4117

33 M 2803 60 D

MENEZ, CESAR V, 4121 W 83RD SUITE 120,66208

381-4484

36 M 74810 56 P

MILLER, FREEMAN LANCE, DOCTOR'S BLDG,66205

492-6200

48 M 1902 74 PD

MORCOS, ABDELMAKALAK E, SHAWNEE MISSION MED CNTR,66201

831-8592

33 M 33004 61 ANES

MORONEY, JEAN M, 10550 QUIVIRA,66215

492-6200

25 F 4109 65 N

MUEHLBERGER, JAMES J, 4601 W 109TH SUITE 314,66211

381-3222

34 M 3006 60 PD

MUELLER, J KENT, 3700 WEST 83RD SUITE 203,66208

649-0923

35 M 1902 62 P

NASH, ROBERT A, 4601 W 109TH,66211

649-8686

31 M 1902 55 P

NAUER, PAULA LOU, 7301 MISSION RD STE 342,66208

384-0745

49 F 1902 74 FP

NEIBURGER, JAMES B, 5300 W 94TH TERR,66207

381-4674

46 M 1642 72 A

NELSON, BRYAN C, 9119 W 74TH,66204

384-5500

50 M 1902 75 PD

NIEMAN, JOHN L, PD BOX 7426,66207

381-8282

28 M 3806 58 PD

NDSTI, JUAN C, 8901 W 74TH #345,66204

262-5014

38 M 13204 63 PS

NYE, C ERIK, 7301 MISSION RD SUITE 348,66208

362-8317

39 M 3520 65 ORS

O'BRYAN, JAMES J, 10550 QUIVIRA,66215

649-9500

47 M 1902 73 PD

O'CONNELL, FRANK A, 7830 STATE LINE,66208

381-0886

25 M 1902 51 FP

O'DELL, MICHAEL L, 9256 CONSER - APT 1A,66212

341-6376

51 M 1902 RES

OKTAWIEC, DANUTA, 5848 FONTANA DRIVE,66205

-

22 F 80303 50 ANES

OSGOOD, GEORGE M, 3700 WEST 83RD,66208

381-5200

14 M 1902 44 IM

PATTERSON, JOHN R, 5317 CHADWICK RD,66205

-

20 M 1902 48 PD

PEARCE, EUGENE W J, 9119 WEST 74TH STREET,66204

831-2334

24 M 2802 49 OBG

PEARCE, LUNETTA M, 9119 W 74TH,66204

362-1525

26 F 3005 49 FP

PENTECOST, RICHARD L, 8900 STATE LINE SUITE 350,66206

383-1410

32 M 1001 56 P

PETERSEN, A GENE, 3700 W 83RD,66208

648-3911

27 M 1902 54 IM

PETERSEN, GERALD O, 3700 WEST 83RD,66208

648-3911

30 M 1902 60 IM

PETIT, CARL ALFONSO, 10550 QUIVIRA,66215

362-7290

33 M 60 GS

PETRIE, SAMUEL C, GEORGETOWN MED BLDG,66202

722-1166

27 M 1902 58 IM

PETTEGREW, PAULINE K, 4601 W 109TH SUITE 225,66211
 381-6765
 21 F 3006 50 FP
 PFUETZE, BRUCE L, 4601 W 109TH,66211
 381-4674
 42 M 1902 68 A
 PFUETZE, KARL D, 10550 QUIVIRA 5TH FLOOR,66215
 362-7290
 40 M 1902 66 CO
 PHILLIPS, WARREN G, 3700 W 83RD,66208
 649-0923
 26 M 1902 60 P
 PILCHARD, WILLIAM A, GEORGETOWN MED BLDG,66204
 632-3210
 39 M 1602 65 OPH
 PITTS, RONALD L, 8901 W 74TH - SUITE 330,66208
 362-2524
 35 M 2002 62 D
 POWELL, CAROL W, 8216 CHEROKEE CIRCLE,66206
 381-3785
 25 F 1902 51 P
 POWELL, KENNETH A, 8216 CHEROKEE CIRCLE,66206
 753-7000
 25 M 1902 53 1M
 PRONKO, MICHAEL J, 4121 W 83RD SUITE 223,66208
 648-7878
 34 M 1902 60 P
 RACELA JR, ANTONIO S, SUBURBAN MEDICAL CENTER,66215
 492-1000
 37 M 74802 63 PATH
 RADOM, SANFORD B, 2304 W 121ST,66209
 677-0883
 40 M 1642 66 R
 REDDY, NARAYAN C, 7301 MISSION RD,66208
 384-2285
 45 M 49521 68 1M
 REIVICH, RONALD S, 11030 GRANADA LANE,66211
 383-3050
 34 M 3806 60 P
 RICHARDS, JON F, 7416 DELMAR,66208
 543-5211
 50 M 1902 75 FP
 RIEKE, FRANK A, 10411 WEST 55TH,66203
 -
 16 M 1902 41 GS
 ROSENBERG, STANTON L, 1900 W 75TH SUITE 200,66208
 362-8080
 30 M 1902 55 P
 ROSENTHAL, RICHARD, 10500 QUIVIRA RD,66210
 492-1000
 50 M 2820 76 EM
 RUBIN, HERBERT M, 10550 QUIVIRA - SUITE 340,66215
 492-1111
 37 M 2802 63 PD
 RUMOLO, MERVIN J, 6340 INDIAN LANE,66208
 -
 03 M 1902 30 GS
 SAFFO, KARL S, 8901 W 74TH,66204
 362-9585
 39 M 52801 62 PS
 SATHYANARAYANA, SARASWATHI, 9119 W 74TH,66204
 432-7419
 45 F 49509 67 OBG
 SAWKAR, LAXMIDAS A, 8901 W 74 STE 312,66204
 384-4844
 36 M 49523 63 1M
 SCHAEFER, JOSEPH PETER, 10550 QUIVIRA - SUITE 230,66215
 492-7440
 34 M 1902 60 1M
 SCHWEGLER, RAYMOND A, 10550 QUIVIRA RD/5TH FL,66215
 492-6200
 37 M 1902 63 CO
 SHAAD, DOROTHY J, 2322 W 51ST,66205
 -
 09 F 1902 44 OO
 SHOFSTALL, WILLIAM H, 6100 MARTWAY,66202
 722-4747
 11 M 3901 41 ENT
 SMITH, DALE C, 4601 W 109TH ST SUITE 224,66211
 381-0353
 20 M 1902 45 OPH
 SMITH, DONALD J, 8600 W 95TH ST,66212
 642-4515
 18 M 1902 49 FP
 SNODELL, FIRMIN E, 5555 W 58TH,66202
 432-2080
 31 M 1902 61 1M
 SNOW JR, ARTHUR D, 8901 W 74TH - SUITE 225,66204
 362-5510
 45 M 1902 75 FP
 SPEER, FREDERIC, 5811 OUTLOOK,66202
 432-0625
 09 M 1902 34 A
 STEINER, ROBERT M, 5311 W 96TH TERRACE,66207
 677-0883
 39 M 4117 65 R
 STEINZEIG, ALFRED S, 6500 HODGES DR,66208
 -
 13 M 1902 37 OO
 STEVENSON, E KENT, 4121 W 83RD SUITE 150,66208
 649-5566
 45 M 2802 67 CHP
 SUGAR, ROBERT L, 8901 W 74TH #248,66204
 341-4343
 40 M 3508 66 OBG
 SULLIVAN JR, HENRY B, 5817 NIEMAN RD,66203
 631-6160
 24 M 1902 52 FP
 SUTTON JR, RICHARD L, 3203 W 83RD TERR,66206
 -
 08 M 2501 29 OO
 TETZLAFF, ARCHIBALD C A, 4520 W 65TH,66208
 334-2500
 26 M 40721 52 ANES
 TICE, GALEN M, 14019 W 91 TERR,66215
 -
 99 M 1902 29 OO
 TRETBAR, LAWRENCE L, 8901 W 74TH,66204
 677-1776
 33 M 1902 60 GS
 TROPP DO, ARNOLD L, 8600 W 95TH STE 102,66212
 648-5600
 46 M 2878 72 FP
 TUTERA, GINO, 10550 QUIVIRA - SUITE 102,66215
 492-1844
 45 M 2803 71 OBG
 VANNAMAN, DONALD D, P O BOX 7426,66207
 381-8282
 43 M 1902 71 PD
 VELARDE, HUGO, 6100 MARTWAY,66202
 287-8400
 - M 64 GS
 WANG, SIONNEY W, 9119 W 74TH ST SUITE 102,66204
 722-2020
 32 M 38503 58 FP
 WEARE, MARY E, 7301 MISSION RD #304,66208
 362-7224
 48 F 4002 73 P
 WE88, JAMES R, 5949 NIEMAN ROAD,66203
 631-0900
 34 M 1902 61 FP
 WERTH, CLAUDE J, 4121 W 83RD,66208
 649-5966
 37 M 1902 64 P
 WHITEHEAD, RICHARD E, 7301 MISSION RD,66208
 362-8317
 31 M 2501 58 ORS
 WHITLEY, DOUGLAS M, 4601 W 109TH SUITE 202,66211
 341-4770
 34 M 1902 60 D
 WIGGINTON, GERALD O, D.O., 9119 W 74TH,66204
 384-5500
 44 M 2878 70 PD
 WILEY, JOHN H, 9119 W 74TH ST,66204
 831-2334
 37 M 4113 63 OBG
 WILSON, L BARRICK, 5602 FAIRWAY RD,66205
 236-8423
 09 M 1902 35 ANES
 WILSON, ROBERT B, 7301 MISSION,66208
 362-3356
 10 M 1902 40 ENT
 WILSON, SLOAN J, 5618 W 62ND,66202
 -
 10 M 1902 36 HEM
 WURSTER, GEORGE R, 3700 W 83RD SUITE 203,66208
 649-0923
 35 M 1902 61 P
 YE, RICHARD C, 7301 MISSION RD,66208
 362-7505
 20 M 24222 46 PS
 YOHE, RUTH M, 8600 W 95TH ST,66212
 383-3377
 26 F 4107 54 POA
 YOUNG, JOHN W, 7301 MISSION RD SUITE 317,66208
 362-7505
 37 M 4706 63 PS
 YOUNGSTROM, KARL A, 9660 REEDER PLACE,66214
 -
 08 M 3607 44 OO
 ZACK, ASHLEY S, 4601 WEST 109TH SUITE 122,66211
 642-4040
 46 M 2803 73 PD
 ZAMIEROWSKI, DAVID S, 10550 QUIVIRA,66215
 362-7290
 42 M 2307 68 PS

ZAREMSKI, SHERMAN C. 7301 MISSION RD SUITE 214.66208
831-0910
33 M 1720 58 IM
ZIMMERMAN, DANIEL D. 1900 W 47TH PL SUITE 310.66205
831-0910
45 M 3005 70 IM

SMITH CENTER—913
(Central Kansas Society)

RELIHAN, FRANCIS H. 116 SOUTH MAIN.66967
282-3291
84 M 1606 07 FP
SHEPPARD, ROBERT G. 120 E COURT.66967
282-6654
21 M 1902 45 GS
STEINKRUGER, VERLYN WILLIAM. 120 E COURT.66967
282-6654
28 M 3005 53 FP
WDDDS, HUGH J. 120 EAST COURT.66967
282-6654
26 M 1902 52 FP

SOUTH HAVEN—316
(Tri-County Society)

UBELAKER, ERNEST J. .67140
892-2261
11 M 1902 38 FP

ST. FRANCIS—913
(Northwest Kansas Society)

GRAM, ERNEST R. PO BOX 62S.67756
332-2511
24 M 1902 52 FP
JEWELL, ROSS L. 203 SPENCER.67756
332-2832
13 M 1902 56 FP
STEPHENSON, LUCILLE C. .67756
-
06 F 1902 32 FP
WALZ, THOMAS J. 115 SOUTH QUINCY.67756
-
94 M 1902 21 00

ST. JOHN—316
(Stafford County Society)

QUACKENBUSH, ROBERT P. .67578
549-3471
21 M 1611 52 FP
SCHERER, ALFRED L. 610 E FIRST.67576
549-3261
32 M 1902 57 FP

ST. MARYS—913
(Pottawatomie County Society)

BRDWN, FRED E. 602 W PALMER.66536
437-2256
26 M 1902 55 FP

STAFFORD—316
(Stafford County Society)

BROWN, C EVERETT. 102 N MAIN.67578
234-5251
10 M 1902 47 A
WARD, ROBERT L. 412 E GRAND.67578
234-5281
24 M 1902 52 FP

STERLING—316
(Rice County Society)

SIMPSON, TOM C. 239 N BROADWAY.67579
278-2123
47 M 71902 73 FP

STOCKTON—913
(Central Kansas Society)

MAUCK, HAROLD C. 623 SOUTH 2ND.67669
425-6280
20 M 1902 54 FP
VOTAPKA, WILLIAM L. 623 S SECOND.67669
425-6280
24 M 1902 53 FP

SUBLETT—316
(Southwest Kansas Society)

THIEMANN, A H. D.D.. 301 DERBY.67877
675-2241
12 M 1805 42 FP

SYRACUSE—316
(Southwest Kansas Society)

PETTERSON, CECIL E. PROFESSIONAL ASSOCIATION.67878
384-5731
14 M 1902 39 FP

TONGANOXIE—913
(Leavenworth County Society)

STEVENS, PHILIP L. BOX 319.66086
845-2090
27 M 1902 54 FP

TOPEKA—913
(Shawnee County Society)

ACKROYD, ALAN W. 918 W TENTH.66604
233-9681
46 M 4901 74 IM
AGAN, LAWRENCE M. 1314 PEMBRCKE LN.66604
357-4306
20 M 5002 44 R
ALONSO, RENE A. CONTINENTAL MED BLOG #440.66606
357-6218
20 M 27501 46 IM
ARMSTRONG, A L. 918 W TENTH.66604
233-9681
41 M
ARREDONDD, MARIO. 6024 SW 26TH.66614
296-7216
25 M 26401 54 P
ASHLEY, BYRON J. 3222 PLASS.66611
233-2280
98 M 1902 24 OPH
ASHLEY JR, B JOHN. 1616 WEST 8TH ST.66606
233-2280
31 M 1902 56 OPH
AVERILL, STUART C. MENNINGER FD.66604
234-9566
24 M 502 52 P
BAHR, RALPH H. S-F CAP REG RADIOOTHER CTR.66606
234-3451
35 M 1606 59 R
BAIR, GLENN O. 415 CONTINENTAL BLDG.66606
233-5153
31 M 2401 57 IM
BAKER, FREDERICK C. 2101 WEST 10TH.66604
232-0909
35 M 4113 62 FP
BAKER, PHILLIP L. 300 CONT MED BLOG.66606
357-0301
37 M 3005 63 DRS
BAKER, RAY O. TOPEKA-SHAWNEE HEALTH DEP.66606
233-8961
30 M 4812 55 GPM
BARNHILL, C ALTON. MENNINGER FD.66601
234-9566
31 M 3601 56 P
BAUCDM, KARAN YVDNNE. 1700 W SEVENTH.66606
233-1979
50 F 1902 75 DBG
BAUDE, EUGENE L ANDRE. 1815 WESTWOOD CIRCLE.66604
354-1946
02 M 39606 27 IM
BEACH, RICHARD R. 106 MED ARTS BLOG WEST.66604
233-7943
23 M 2802 48 IM

BEALE, DAVID A, MENNINGER FD,66601
 234-9566
 31 M 5404 56 P
 BEATY, JAMES R, 1700 WEST 7TH,66606
 354-1111
 32 M 5101 66 EM
 BECK, JOSEPH D, 1001 GARFIELD,66604
 235-2351
 18 M 3005 43 PD
 BEDFORD, O R, 6423 HUNTDON,66601
 -
 09 M 4802 40 OD
 BEELMAN, FLOYD C, 1319 HUNTDON,66604
 235-3981
 02 M 3840 35 FP
 BELLER, WILLIS L, 310 MED ARTS BLDG WEST,66604
 234-3451
 14 M 1902 41 R
 BERLAND, DAVID I, 80X 829,66601
 -
 47 M 2803 78 P
 BLAKE, HENRY S, 1933 WESTWOOD DR,66604
 -
 11 M 3520 37 OD
 BDNEBRAKE, CHARLES RICHARD, 1700 W SEVENTH,66606
 233-1979
 48 M 1606 75 OBG
 BDREL, DAVID, ST FRANCIS HOSP & MED CTR,66606
 295-8473
 45 M 1902 71 PATH
 BOWEN, CLOVIS W, 2200 WEST 10TH,66604
 234-8601
 12 M 1902 37 FP
 BDWEN JR, HARRY J, 2200 WEST 10TH,66604
 234-8601
 11 M 1902 37 FP
 BDYO, SPENCER H, 1815 WEST 2ND,66606
 -
 11 M 1902 35 OBG
 BRAUNSDORF, ROBERT L, 2625 OHIO,66605
 354-7630
 08 M 2501 35 FP
 BRIDWELL, RUSSELL E, 1710 WEST 10TH,66604
 234-2624
 26 M 1902 51 ENT
 BROCHER, TOBIAS, PD 80X 829,66601
 234-9566
 17 M 40733 42 P
 BROOKER, ROBERT M, 600 MADISON,66607
 235-1170
 18 M 1902 43 TS
 BROUCEK, FRANCIS J, CONTINENTAL MEDICAL BLDG,66606
 266-9503
 32 M 1643 58 P
 CAPDOOTH, L WAYNE, 1931 GRANTVILLE RD,66608
 235-6253
 44 M 4706 70 EM
 CARVER, LARRY A, 130 CONT MED BLDG,66606
 234-8653
 37 M 1902 73 P
 CASHMAN JR, MAURICE R, 901 GARFIELD,66606
 354-9591
 35 M 1902 61 HEM
 CAVANAUGH, JOHN W, 200 PROFESSIONAL BLDG,66604
 235-3488
 13 M 1803 39 GS
 CHAMBERLIN JR, CECIL R, BOX 829,66606
 234-9566
 30 M 3901 55 CHP
 CHEN, TAK-MING, 303 MED ARTS BLDG,66604
 234-3451
 41 M 24402 68 ANES
 CHERRY JR, ARTHUR C, 918 WEST 10TH,66604
 233-9681
 27 M 3806 53 PD
 CHEUNG, P W H, 918 WEST 10TH,66604
 233-9681
 36 M 24338 58 R
 CHOY, JAMES K L, 918 W 10TH,66604
 233-9681
 10 M 1643 37 U
 CLARK, CRAIG N, 3124 E 6TH,66607
 354-7683
 29 M 1902 58 FP
 CDCHRAN, PAUL W, MENNINGER FD,66601
 234-9566
 33 M 4802 58 IM
 CDHEN, LOUIS, 918 W 10TH,66604
 233-9681
 14 M 1902 41 IM
 COLLINS, DEAN T, MENNINGER FD,66601
 234-9566
 28 M 1902 55 P
 COLLINS, EDWARD JOSEPH, 918 W TENTH,66604
 233-6493
 45 M 1611 71 OPH
 COLLINS, FRANCIS T, 206 MED ARTS BLDG EAST,66604
 233-6470
 14 M 1902 43 IM
 CONNELLY, JOHN C, MENNINGER FD,66601
 234-9566
 39 M 3806 65 P
 CONROY, ROBERT W, MENNINGER FD,66601
 234-9566
 38 M 2604 64 P
 *COOK EXEC SEC, BYRDN, SHAWNEE COUNTY MED SOCIETY,66606
 234-5668
 M
 COOVER, RICHARD B, 629 SE QUINCY,66603
 232-5681
 41 M 5104 66 OPH
 COTTON, ROBERT T, 901 GARFIELD,66606
 354-9591
 19 M 1902 45 IM
 CRARY, JOHN E, 201 MED PLAZA BLDG,66604
 233-4202
 18 M 1902 43 IM
 CROUCH, WILLIAM H, 109 MED ARTS BLDG WEST,66604
 232-8224
 20 M 2802 45 PD
 DAVIS, CHESTER R, 631 HORNE,66604
 232-9394
 50 M 1902 75 FP
 DE SOIGNE, RAPHAEL R, 2400 W 29TH,66611
 267-0150
 19 M P
 DELGAUD, SERGIO, TOPEKA MED CENTER,66604
 233-9681
 37 M 2501 62 OPH
 DUNAGIN, JACK A, 918 W 10TH,66604
 233-9681
 20 M 1902 44 P
 DURST JR, ROBERT D, CONTINENTAL MED BLDG,66606
 357-5166
 42 M 2803 69 D
 ELDER, DOUGLAS M, 310 MED ARTS BLDG,66604
 234-3451
 41 M 1902 69 OR
 FEAGAN, JERRY, 901 GARFIELD,66606
 354-9591
 39 M 1902 63 GE
 FERNANDEZ, LUIS A, 1615 W BTH,66606
 233-8961
 14 M 27501 41 PD
 FIELD, RICHARD A, 303 MEDICAL ARTS BLDG,66604
 235-3451
 29 M 1902 55 ANES
 FILLMAN, ELOON M, 301 MEDICAL PLAZA BLDG,66604
 233-4256
 20 M 1611 44 U
 FITCH, ROBT ELLSWORTH, 1455 LAKESIDE DR,66604
 296-4750
 19 M 3005 47 ADM
 FORD, FRED L, 220 MEDICAL ARTS BLDG,66604
 234-5516
 11 M 2501 36 GS
 FOSTER, CHARLES G, 110 CONT MED BLDG,66606
 232-6964
 21 M 4102 47 IM
 FOSTER, O BERNARD, VA HOSPITAL,66622
 272-3111
 14 M 2501 38 NP
 FUSILLO, MICHAEL, BOX 829,66601
 234-9566
 48 M 3508 74 P
 GABBARD, GLENN OWENS, BOX B29,66601
 234-9566
 49 M 1601 75 P
 GANDHI, SHANTIKUMAR K, 631 HORNE,66606
 233-9636
 40 M 49501 67 TS
 GANZARAIN, RAMON C, MENNINGER FD,66601
 234-9566
 23 M 23101 47 P
 GAY, JOHN D, 310 MED ARTS BLDG,66604
 234-3451
 42 M 4802 68 DR
 GENOEL, JOSEPH E, 918 W 10TH,66604
 233-9681
 12 M 4804 37 ORS
 GIESSEL, MICHAEL D, CONTINENTAL MED BLDG,66606
 357-5166
 48 M 1902 74 O

GIMPLE, KENNETH, 631 HORNE,
233-7491
45 M 1902 71 ORS
GLEASON, JIMMIE A, 800 LINCOLN, 66606
233-5101
33 M 1902 58 ORG
GOODFREY, KENNETH E, 3200 W 29TH TERRACE #7, 66614
273-6153
15 M P
GOERING, EMIL L, 600 MADISON, 66607
354-S100
27 M 1902 57 1M
GOOTEE, JOSEPH E, 3204 W 17TH, 66604
-
21 M 2834 47 00
GRAHAM JR, CHARLES P, 631 HORNE, 66606
354-9504
40 M 3601 65 GS
GRAY, DAVID E, 115 W CRANE, 66603
234-8621
16 M 1606 42 GEN
GRAYIB, ANTOINE S, MEMORIAL HOSP, 66607
233-2361
18 M 60501 46 1M
GREENBERG, MARK, 310 MED ARTS BLOG, 66604
234-3451
46 M 1611 72 R
GREENE, HORACE T, 1710 W 10TH, 66604
354-7508
15 M 401 42 FP
GREENWOOD, EDWARD O, 3617 W 6TH, 66601
234-9566
01 M 702 38 CHP
GREER, RICHARD H, 918 W 10TH, 66604
233-9681
09 M 1902 39 1M
GRIGSBY JR, GEORGE T, 1931 GRANTVILLE RD, 66619
234-9961
41 M 3601 66 1M
GUTOVITZ, ALLEN LOUIS, PROFESSIONAL BLOG STE 201, 66604
233-9643
46 M 1611 72 CO
HALASWAMY, MANAGAVAOI S, 2626 ASHWORTH PLACE, 66614
843-4455
36 M 49509 60 PO
HALLEY, M MARTIN, 40 MED ARTS BLOG, 66604
233-1710
27 M 2401 53 TS
HAMILTON, NORMAN G, BOX 829, 66601
392-2144
51 M 1902 76 FP
HARRIS, HUBERT L, 210 MED ARTS BLOG, 66604
233-3151
12 M 1803 39 O
HARRIS, PATRICIA A, 1617 W 26TH, 66611
354-8461
29 F 1902 54 1M
HARRISON, HALL E, 901 GARFIELD, 66606
354-9591
39 M 2802 65 1M
HART JR, PAUL VINCENT, 403A NW LYMAN RD, 66608
295-8090
50 M 76 ER
HARTOCOLLIS, PETER, MENNINGER FO, 66601
234-9566
22 M 86905 55 P
HEBBAR, SATYA N, 918 W 10TH, 66604
233-9681
39 M 49504 62 CO
HERRERA, JORGE J, 600 MADISON, 66607
354-S100
27 M 64901 55 1M
HIEBERT, JOHN B, 901 GARFIELD, 66606
357-6251
40 M 1902 68 CO
HILL, ROBERT N, 901 GARFIELD, 66606
354-9591
14 M 1902 67 1M
HIRSCHBERG, J COTTER, MENNINGER FO, 66601
234-9566
15 M 1602 40 CHP
HISZCZYNSKYJ, ROMAN, 1500 W TENTH, 66604
234-9961
35 M 1803 66 PATH
HOBBS, DONALD O, 200 CONTINENTAL MED BLOG, 66606
233-7491
28 M 2401 54 ORS
HOHERZ, DAVID G, 314 MED ARTS BLOG, 66604
235-1170
45 M 1902 76 TS
HORNE, JAMES B, 820 QUINCY STE 207, 66612
234-2120
26 M 1606 52 P
HOYT, ARTHUR W, 2055 CLAY, 66604
234-S663
14 M 2501 40 P
HSU, CHENG H, 918 W 10TH, 66604
233-9681
41 M 38502 66 U
HSU, SHIN-FU, MEDICAL PLAZA BLOG, 66604
233-9681
43 M 24402 68 OTO
HUAMAN, ANTONIO M, 631 HORNE #S, 66606
295-8060
29 M 73701 56 PATH
HUSTON, JOSEPH W, 918 W 10TH, 66604
233-9681
35 M 1902 62 ORS
HUTTON, EREDOERICK A, 102 MED PLAZA BLOG, 66604
234-0553
29 M 6701 58 PS
JACKSON, LINDA H, 212 WOODLAWN AVE, 66606
234-9566
42 F 3601 67 CHP
JACORY II, ROBERT E, 340 CONT MED BLOG, 66606
232-9394
46 M 2307 72 FP
JANSSSEN, ERWIN T, MENNINGER FO, 66601
234-9566
36 M 1803 62 P
JOHNSON, FREDERICK E, C/O M O OLSON APT 606, 66604
-
92 M 2843 21 00
JOSEPH, BRIAN W, 130 CONT MED BLOG, 66606
234-8653
38 M 35205 61 CHP
JOSS, CHARLES S, 221 MED ARTS BLOG W, 66604
232-0444
14 M 1606 40 GS
JOYCE, G BERNARD, 200 CONTINENTAL MED BLOG, 66606
233-7491
17 M 1902 44 ORS
KATZ, JEROME B, MENNINGER FO, 66601
234-9566
22 M 2101 44 P
KAVEL, KARL K, MED PLAZA BLOG, 66604
234-2663
36 M 3605 64 POA
KEARNS, NORBERT W, 5504 FAIRLAWN RD, 66604
-
43 M 1002 70 P/NP
KELLY, DAN A, 109 MED ARTS BLOG W, 66604
232-8224
39 M 2803 64 PO
KENNEDY, HOWARD U, 1119 W 10TH, 66604
233-8268
18 M 401 44 1M
KEYS JR, ROBERT C, 303 MED ARTS BLOG, 66604
235-3451
36 M 1902 62 ANES
KIM, YONG W, CONT MED BLOG, 66606
232-6964
28 M 58302 49 1M
KINDLING, PAUL H, 40 MED ARTS BLOG, 66604
233-1710
30 M 3545 61 TS
KIRKEGAARD, ROOGER S, 918 W 10TH, 66604
233-6493
30 M 1803 56 OPH
KLEINHOLZ JR, EMIL JOHN, 600 MADISON, 66614
354-S280
39 M 3503 65 1M
KLEMMER, HERBERT, MENNINGER FO, 66601
234-9566
11 M 1805 37 P
KOVARIK, ERNEST O, 900 WASHBURN, 66606
357-S171
36 M 3005 64 OPH
KROLL, HARRY G, 200 CONTINENTAL MED BLOG, 66606
233-7491
24 M 1602 50 ORS
LAWSON, DWIGHT, 108 MEADOW LANE, 66606
235-9592
06 M 2802 30 1M
LAWSON, ROBERT C, 310 MED ARTS BLOG WEST, 66604
234-3451
25 M 801 48 R
LEE, SONG OOW, 303 MED ARTS BLOG, 66604
235-3451
43 M 38505 68 ANES
LEE, SONG PING, 918 W 10TH, 66604
233-9681
34 M 38502 61 OTO
LEIFER, WILLIAM NEIL, 1500 W TENTH, 66606
354-6031
47 M 1902 73 PATH

LENTZ, WILLIAM R. 308 MED ARTS BLDG,66604

235-3443

24 M 1902 53 FP

LESSENDOEN JR, C M, 103 MEDICAL PLAZA BLDG,66604

234-5533

18 M 1902 43 O

LEVY, EDWIN Z. 4125 SW GAGE CTR DR,66604

234-9566

29 M 1606 54 P

LILLICH, DAVID WILLIAM, 631 HORNE #340,66604

232-9394

48 M 1611 74 FP

LIN, MAU SHONG, MEMORIAL HOSPITAL,66607

354-5275

45 M 24402 71 IM

LONG, JOHN W. 1001 HORNE ST,66604

233-1710

43 M 1902 70 TS

LUMB, RAYMOND C. 901 GARFIELD,66606

354-9591

42 M 1001 68 RHU

LYNCH, JOHN A. 300 CONT MED BLDG,66606

357-0301

30 M 2834 55 ORS

MAGILL, ALFRED MORTON, 1710 W TENTH,66604

233-9643

80 M 1642 58 CD

MARSHALL, B M, 1826 SW 34TH,66611

-

08 M 2802 34 U

MARTIN, WILLIAM D. 303 MED ARTS BLDG,66604

235-3451

19 M 1902 44 ANES

MAU, WALTER, 301 MEDICAL PLAZA BLDG,66604

233-4256

16 M 1611 40 U

MCCARTER, DUANE K. 2101 W 10TH,66604

233-8979

26 M 1902 58 IM

MCCELLAN, JOHN W. 1710 W 10TH,66604

234-2624

11 M 3006 36 ENT

MCCLINTOCK, EDWARD A. 111 MEDICAL ARTS BLDG,66604

354-8518

07 M 1902 33 IM

MCCLURE, JAMES A. 301 MED PLAZA BLDG,66604

233-4256

18 M 1902 44 U

MCELROY, ROBERT T. 221 MED ARTS BLDG,66604

232-0444

35 M 1902 61 GS

MEGIBOW, ALAN D. 918 W 10TH,66604

233-9681

37 M 3503 64 CHP

MEIDINGER, RICHARD, 310 MED ARTS BLDG,66604

234-3451

39 M 1902 65 OR

MENNINGER, KARL A. BOX 829,66601

-

93 M 2401 17 P

MENNINGER, ROBERT G. 3617 W 6TH ST,66601

234-9566

22 M 3545 52 P

MENNINGER, RAY W. 3617 W 6TH,66601

234-9566

26 M 3520 51 P

MENNINGER, W WALTER, THE MENNINGER FD,66601

234-9566

31 M 3520 57 P

MILLS JR, PHILIP E. 901 GARFIELD,66606

357-6171

36 M 1902 64 N

MITTLEMAN, FREDERICK S. MENNINGER FD,66601

234-9566

45 M 3006 70 P

MOULIN, HERBERT C. MENNINGER FD,66601

234-9566

13 M 3005 38 P

MURRE, HUGH C. 1500 WEST 10TH,66604

234-9961

33 M 4812 59 PATH

MORRIS, MERLE D. 1401 W 10TH,66604

234-2877

21 M 1902 45 ORG

MORRIS JR, J TARTON, MENNINGER FD,66601

234-9566

23 M 4804 47 CHP

MYER, JOHN D. 301 MEDICAL PLAZA BLDG,66604

233-4256

39 M 1902 65 U

MUELLER, ARNOLD V. 918 WEST 10TH,66604

233-9681

31 M 3005 57 IM

MURPHY, THOMAS MEAD, PD BOX 829,66601

234-9566

41 M 3901 68 P

MYERS, JO ANN, MENNINGER FD,66601

234-9566

28 F 1902 53 P

NABOURS, RICHARD D. 4228 W 29TH ST TERR,66614

272-7190

27 M 1902 54 FP

NANCE, JDEL, MENNINGER FOUNDATION,66603

234-9566

42 M 3546 72 P

NELSON, JAMES N. 918 W 10TH ST,66604

233-9681

30 M 1902 59 P

NICE, G WILLIAM, 112 MED ARTS BLDG EAST,66604

235-8090

22 M 1902 46 IM

NOVOTNY, PETER C. MENNINGER FD,66606

234-9566

30 M 15407 55 P

NYSTROM, CURTIS A. 2707 W 29TH,66614

272-8440

23 M 1902 54 FP

O'NEIL, ROBERT H. 901 GARFIELD,66606

354-9591

20 M 1902 45 IM

O'BURN, ROBERT L. 1150 OAKLEY,66604

234-9566

19 M 2802 50 P

ORGAN, ALAN ELLIOTT, MEDICAL ARTS BLDG,66604

232-8224

48 M 2803 76 PD

PALMBERG, KENT E. 901 GARFIELD,66606

354-9591

49 M 1902 74 IM

PAPP, ROBERT, 3230 W 30TH,66614

-

38 M 1611 63

PARKS, GILBERT R. 629 QUINCY,66603

234-0591

44 M 4102 73 P

PARMAN, ROBERT O. 109 MED ARTS BLDG WEST,66604

232-8224

27 M 1902 54 PD

PARULKAR, DEEPAK S. ST FRANCIS HOSP & MED CTR,66606

295-8440

49 M 67 ANES

PATEL, VINOD, 655 WESTCHESTER RD,66606

357-6171

47 M 49531 69 N

PATINO, EDGAR, MENNINGER FD,66601

234-9566

41 M 26406 66 P

PATRICK, FRED EDWARD, 109 MEDICAL ARTS BLDG,66604

232-8224

45 M 1902 71 PD

PAYNE, ROBERT R. 200 CONTINENTAL MED BLDG,66606

233-7491

29 M 1902 55 DR5

PENKA, WAYNE E. DEPT OF PATHOLOGY,66606

295-8472

46 M 3006 72 PATH

PENN, GEDRGE M. MENNINGER FD,66601

234-9566

30 M 4802 58 P

PETERSON, DEAN L. 303 MED ARTS BLDG WEST,66604

235-3451

24 M 1902 54 ANES

PETERSON, ROBERT L. STDRMDNT-VALE EMERGENCY,66606

354-6108

36 M 1902 62 FP

PETERSON, VERNON J. 310 MED ARTS BLDG,66604

234-3451

42 M 512 68 R

PETRIK, EDWIN L. MEMORIAL HOSPITAL,66607

354-5100

35 M 1902 64 IM

PETTERSON, DENNIS CRAIG, 310 MEDICAL ARTS BLDG,66604

234-3451

49 M 1902 74 R

PFUTZ, ROBERT E. 209 MED ARTS BLDG EAST,66604

232-9257

09 M 1902 35 DRG

PIERCE, CHARLES F. 918 W 10TH,66604

233-9681

24 M 4101 51 DRG

PIERCE, DONALD R. 307 MED ARTS BLDG EAST,66604

235-2226

23 M 5101 49 FP

POLLY, RICHARD E. 631 HORNE ST,66606

357-0301

42 M 1803 68 ORS

PDRTER, ROBERT D, 901 GARFIELD, 66606
 354-9591
 41 M 2802 67 1M
 PDWELL, WILLIAM R, 833 GARFIELD, 66606
 233-8941
 30 M 1902 54 GS
 PDWELL II, BENSON M, 400 CONTINENTAL MED BLDG, 66606
 354-9504
 26 M 1606 49 TS
 PRESTON, RALPH R, 1710 WEST 10TH, 66604
 234-2624
 19 M 1902 44 DPH
 PRDKOP, BRADFORD S, 900 WASHBURN, 66604
 233-3900
 32 M 1606 57 DPH
 PYLE, LUCIEN R, 211 MED ARTS BLDG EAST, 66604
 233-1304
 01 M 1601 28 DBG
 RAINBOW, KATHRYN A, 820 QUINCY STE 207, 66612
 296-4503
 21 F 4707 48 P
 RAMSEY, BARTLETT W, 109 MED ARTS BLDG, 66604
 234-3465
 25 M 1902 50 PD
 RANDELL, EDGAR C, 800 LINCOLN, 66606
 233-5101
 41 M 3005 66 DBG
 RANSON, JAMES H, 223 MEDICAL PLAZA BLDG, 66604
 234-2663
 36 M 1803 62 A
 REIMER, DONALD R, ANES DEPT ST FRANCIS HDSP, 66606
 354-8411
 34 M 702 62 ANES
 REINKING, VICTOR E, 918 WEST 10TH, 66604
 233-9681
 26 M 1902 51 1M
 RENDDN, HUMBERTO M, 115 W CRANE, 66603
 234-8621
 36 M 73705 64 PATH
 REYMOND, RALPH D, S-F CAP REG RADIODIAGN CTR, 66606
 234-3451
 37 M 2301 67 R
 RICHARDSON, J M, TOPEKA MEDICAL CENTER, 66604
 233-9681
 47 M 1611 74 1M
 RIEDEL, ROBERT H, 6731 SW ALYESBURY RD, 66610
 235-0011
 04 M 2802 28 PH
 ROBERTS, WARREN E, PC BDX 4047, 66601
 272-5797
 25 M 1902 57 FP
 ROBINSO, DAVID B, 800 LINCOLN, 66606
 233-5101
 47 M 1902 73 DBG
 ROCHER, PAUL V, 1001 MULVANE, 66604
 233-0401
 47 M 1902 73 FP
 ROEDER, ROBERT E, 901 GARFIELD, 66606
 534-9591
 40 M 1902 67 1M
 ROSS, JACK L, MENNINGER FD, 66601
 234-9566
 32 M 4812 56 P
 RORTER, LARRY, 301 MEDICAL PLAZA BLDG, 66604
 233-4256
 M GS
 ROVINSKI, HELEN T, 2200 GAGE BLVD, 66614
 272-3111
 16 F 1001 43 PM
 RODY, WILLIAM R, 1561 LAKESIDE DR, 66604
 233-1979
 26 M 1606 48 ADM
 RUCKER, CLEMENS, 1205 W 29TH, 66611
 -
 86 M 2822 05 DD
 RUNNELS, JOHN B, 901 GARFIELD, 66606
 357-6171
 35 M 1902 61 NS
 RUPP, RICHARD J, 901 GARFIELD, 66606
 354-9591
 42 M 3841 68 CD
 SANCHEZ, ROGER L, 918 WEST 10TH, 66604
 233-9681
 31 M 64901 64 U
 SARGENT, JOSEPH D, MENNINGER FD, 66601
 234-9566
 32 M 2501 58 1M
 SAYLOR, EDWARD H, 918 WEST 10TH, 66604
 233-9681
 39 M 1902 65 PD
 SAYLOR, LESLIE L, 918 WEST 10TH, 66604
 -
 07 M 1606 35 DD
 SAYLOR, MARK, 918 WEST 10TH, 66604
 233-9681
 37 M 1902 66 GS
 SCAMMAN, W W, 115 W CRANE, 66603
 234-8621
 32 M 4705 57 PATH
 SCHLESSE, HARVEY L, 918 MERCHANTS NATL BK, 66612
 235-3184
 21 M 3901 51 P
 SCHLESSE, PATRICIA T, KANSAS ST BD OF HEALTH, 66604
 -
 24 F 3901 49 PD
 SCHRAM, PETER CHARLES, 130 CONTINENTAL BLDG, 66606
 234-8653
 39 M 2507 69 P
 SEGERSON, JOHN A, 901 GARFIELD, 66606
 357-6171
 18 M 3545 43 N
 SEHDEV, JOAN, MEMORIAL HDSP, 66607
 354-5100
 40 F 6101 63 FP
 SETTLE SR, RUSSELL D, 2320 CHELSEA DRIVE, 66614
 -
 04 M 1902 29 DD
 SEVIER, SAMUEL M, 3107 W 21ST, 66604
 296-5306
 19 M 4812 44 1M
 SHAW, JOSEPH L, MED ARTS BLDG, 66604
 235-6221
 34 M 511 60 DRS
 SHEAFER, DOUGLAS, 918 W 10TH, 66604
 233-9681
 34 M 1902 60 P
 SHELTON, STEPHEN E, 918 W 10TH, 66604
 233-9681
 35 M 702 61 P
 SHERWOOD JR, CLARENCE E, CONTINENTAL MED BLDG, 66606
 354-9504
 22 M 702 53 GS
 SIMPSON, WILLIAM S, MENNINGER FOUNDATION, 66601
 234-9566
 24 M 6001 48 P
 SISK, PHILLIP B, 310 MED ARTS BLDG WEST, 66604
 234-3451
 32 M 1803 56 R
 *SLAUGHTER DIR, JERRY, KANSAS MEDICAL SOCIETY, 66612
 235-2383
 M
 SMITH, LEO A, 918 BUCHANAN, 66604
 -
 08 M 3006 33 DD
 SNARR, JACK W, MED ARTS BLDG W, 66604
 234-3451
 41 M 6201 65 DR
 SPEARMAN, JESSE L, MED ARTS BLDG RDM 24, 66604
 234-2879
 20 M 1902 54 DBG
 SPENCER, MILLARD C, 310 MED ARTS BUILDING, 66604
 234-3451
 28 M 1902 55 R
 SPENCER, WAYNE E, 103 MED ARTS BLDG EAST, 66604
 233-9686
 38 M 1902 64 1M
 STEIN, JOSEPH M, 901 GARFIELD, 66606
 357-6171
 24 M 3519 47 N
 STICK, KARL W, 1710 W 10TH, 66604
 235-5205
 13 M 2834 37 DPH
 SUFI, MOHAMMAD ASHRAF, MEMORIAL HDSP, 66607
 354-5286
 43 M 70402 68 1M
 SUFI, OASER A, 115 W CRANE, 66603
 234-8621
 44 F 70402 68 PATH
 SUTTON, RICHARD D, 204 MED ARTS BLDG, 66604
 233-7491
 38 M 4706 67 DRS
 SWIGGER JR, GLENN, MENNINGER FD, 66601
 234-9566
 35 M 3806 60 P
 TAPPEN, DANIEL L, 800 LINCOLN, 66606
 233-5101
 16 M 1902 41 DBG
 TARGONNIK, KARL K, K-STATE REC & DIAGNOSTIC, 66601
 296-7281
 15 M 40710 49 P
 TARNOFF, GERALD M, BDX 829, 66601
 234-9566
 48 M 73 P
 TARNOWER, WILLIAM, MENNINGER CLINIC, 66601
 234-9566
 21 M 4802 48 P

TEMPERD, STEPHEN J. 310 MED ARTS BLDG.66604
234-3451

42 M 1606 67 R
THOMAS, NORMAN W. 40 MED ARTS BLDG.66604
233-1710

34 M 2501 59 TS
THURSTON, DAVID E. 200 CONTINENTAL BLDG.66606
233-7491

29 M 1902 55 ORS
TOTH, JOHN ROY. 631 HORNE - SUITE 340.66606
232-9394

49 M 1902 71 FP
TOZER, RICHARD C. 901 GARFIELD.66606
357-6171

19 M 4102 45 NS
TRAVIS, JOHN W. S-F CAP REG RADIOOTHER CTR.66606
295-8000

29 M 1606 55 R
TREES, CLYDE B. 3700 HUNTDON.66604
-

09 M 2401 33 00
TREGER, NEWMAN V. 1704 W 10TH.66604
354-8761

16 M 1902 40 IM
TWELOW, STUART W. 820 QUINCY - ROOM 41B.66612
233-1607

41 M 67101 66 P
UHR, NATHANIEL. MENNINGER FOUNDATION.66601
234-9566

00 M 3519 21 IM
VANDE GARDE, LARRY O. 800 LINCOLN.66606
233-5101

41 M 1803 66 08G
VISWANATHAN, BYRAVAN. 600 MADISON.66607
354-5100

39 M 49534 62 HEM
VOTH, HAROLD M. MENNINGER FOUNDATION.66601
234-9566

22 M 1902 47 P
WALLACE, LEO F. 1700 W 7TH.66606
-

17 M 1902 41 EM
WALLS, WILLIAM J. 310 MED ARTS BLDG.66604
234-3451

39 M 2834 66 DR
WALZ, ROYCE C. 1710 W 10TH SUITE 205.66604
234-2676

27 M 15407 60 P
WARD, HOWARD N. 901 GARFIELD.66606
354-9591

37 M 1606 62 HEM
WARE, LUCILE M. MENNINGER FOUNDATION.66601
234-9566

29 F 3501 53 P
WARRICK, DAVID ALAN. 918 W TENTH.66604
233-9681

49 M 3843 76 IM
WATKINS, PHILIP H. 900 WASHBURN.66606
354-1703

46 M 1902 73 OPH
WEAVER, WALTER D. 900 WASHBURN ST.66606
357-5171

41 M 1902 69 OPH
WEBER, DARRELL J. 1710 W 10TH.66604
233-2305

16 M 1902 44 FP
WHITE, HARRY H. 901 GARFIELD.66606
357-6171

34 M 1902 58 N
WIKSTEN, VERNON C. 807 TERRACE AVE.66611
-

11 M 1902 37 00
WILCOX, DONALD E. 6700 S TOPEKA AVE.66620
296-3782

24 M 1902 55 PH
WILD5, CHARLES E. 3817 E SIXTH.66607
-

M P
WILLIAMS, HOWARD V. STATE OFFICE BUILDING.66612
296-3471

18 M 1205 43 P
WILSON, MARVIN H. 38 MED ARTS BUILDING.66604
234-0591

38 M 1003 64 GS
WING, NANCY J. 700 HARRISON.66603
295-3175

30 F 5104 56 ADM
WONG, NORMUND. MENNINGER FD.66601
234-9566

34 M 502 59 P
WOODS, ROBERT P. 901 GARFIELD.66606
357-6171

14 M 6701 40 N

YOUNG, THEODORE E. 107 MED ARTS BLDG WEST.66604
232-0576

22 M 2307 46 PD
ZACHARIAS, DAVID LLOYD. 1500 W TENTH.66606
234-6691

26 M 1902 53 PATH
ZIMMERMAN, WILLIAM H. 515 MANHATTAN BLDG.66612
232-4377

20 M 3006 52 GS

TRIBUNE—316 (Southwest Kansas Society)

WERNER, WILLARD F. .67879
376-4251

24 M 1902 52 FP

TROY—913 (Northeast Kansas Society)

MASTERTON, MELVIN LEROY. 210 S MAIN.66087
-

23 M 4901 48 R

ULYSSES—316 (Southwest Kansas Society)

BREWER, MARSHALL A. PO BOX 687.67880
356-1261

19 M 1902 46 FP
GREENWOOD, JAMES F. 223 N MAIN.67880
-

33 M 1611 65 FP
TILLOTSON, DON R. 223 N MAIN.67880
356-1261

32 M 1902 65 FP

VALLEY CENTER—316 (Sedgwick County Society)

DANIELS, ROBERT M. 929 N ST FRANCIS.67214
262-6211

24 M 1902 54 FP
WILSON, ROBERT L. RR 1.67147
685-2563

30 M 1902 57 EM

WAKEENEY—913 (Central Kansas Society)

BERNER, NEAL E. 323 RUSSELL.67672
743-2124

44 M 1902 72 FP
CLARK, DAVID H. MEDICAL CENTER BLDG.67672
743-2124

36 M 1902 62 FP
HAMILTON, JAMES J. MEDICAL CENTER.67672
743-2124

30 M 1902 55 FP

WAMEGO—913 (Pottawatomie County Society)

BORGENDALE, LLEWELLYN V. 1601 SUNSET.66547
456-2291

29 M 1902 60 FP
BRADEN, BILL L. 507 ELM.66547
456-2291

31 M 1902 60 FP
CLARK, LAURENCE A. 507 ELM.66547
456-2291

12 M 1902 42 FP

WASHINGTON—913 (Northeast Kansas Society)

BITZER, P A. 115 W 3RD.66968
-

03 M 3005 26 00

WARREN, LINDA D. 103 E 3RD, 66968
325-2240
44 F 1902 70 FP

WATHENA—913
(Northeast Kansas Society)

PETERSON JR, EVAN A. 324 ST JOSEPH ST, 66090
989-3122
24 M 1803 55 FP

WELLINGTON—316
(Tri-County Society)

ANDERSON, LARRY R. 1323 NORTH A, 67152
326-3301
43 M 1902 73 FP
CDLE, WARD M. 110 N JEFFERSON, 67152
326-7221
08 M 1902 36 FP
DIACDN, JAMES L. 1009 SHADYLANE CT, 67152
326-2111
24 M 3901 52 FP
HESSE, ROBERT S. 1323 NORTH A, 67152
326-7792
43 M 1902 69 PATH
MCCORMICK, EUGENE C. SECURITY STATE BANK BLDG, 67152
326-3914
31 M 1902 56 FP
MCGOVERN, JAMES L. 124 E LINCOLN, 67152
326-2111
22 M 3901 52 FP
NALDOZA JR, FAUSTINO M. 1323 NORTH A, 67152
326-8171
M 74801 64 GS
NIEBLES, ANGEL. 1322 NORTH A, 67152
-
M
WEIGAND, JDEL T. 1323 NORTH A, 67152
326-3301
43 M 1902 70 FP

WELLSVILLE—913
(Franklin County Society)

SIMMONS, WILLIAM C. 518 MAIN, 66092
883-2191
34 M 1902 60 FP

WESTMORELAND—913
(Pottawatomie County Society)

DECHAIRD, THOMAS, DECHAIRD HDS, 66549
457-3311
13 M 1902 36 FP

WICHITA—316
(Sedgwick County Society)

ABBAAS, DILAWER H. 1152 S CLIFTON, 67218
685-1111
45 M 70402 71 N
ADAMS, AUSTIN J. 1056 KEVIN, 67208
-
10 M 4804 36 OD
AGUSTIN, CONRAD M. 1035 N EMPORIA STE 165, 67214
267-3389
38 M 74807 62 OBG
AHLSTRAND, RICHARD A. 3333 E CENTRAL STE 214, 67208
685-1291
41 M 3005 67 R
ALFONSD, MANUEL. 3244 E DOUGLAS, 67208
689-9445
37 M 84710 66 ANES
*ALLEN, DWIGHT EXEC DIR, MED SDC OF SEDGWICK CD, 67211
683-7557
M
ALMONTE, PRISCILLA C. 303 S HILLSIDE, 67207
684-7251
44 F 74801 67 ANES
ALMONTE, RODOLFO D. 1431 BLUFFVIEW DR STE 217, 67207
686-3791
39 M 74801 64 OBG

ANDERSON, DONALD S. 3333 E CENTRAL, 67208
685-4389
42 M 1902 69 ANES
ANDERSON, EUGENE G. SUTTON PLACE, 67202
265-8619
19 M 1902 44 D8G
ANDERSON, HARRY D. 14516 E PAWNEE, 67230
-
08 M 1601 34 OD
ARGOSINO, RODOLFO. 1148 S HILLSIDE, 67207
683-6506
40 M 74801 63 GS
ARTZ, TYRONE D. 902 N HILLSIDE, 67214
689-9171
41 M 1803 67 DRS
ASHMORE, ARTHUR L. 5025 E KELLOGG, 67218
-
05 M 1902 32 OD
AUNINS, JOHN. 4853 HEMLOCK, 66048
524-6805
28 M 4706 56 FP
BAILEY, DONALD C. 3243 E MURDOCK, 67208
685-1491
37 M 3901 65 DRS
BARBA, ANTONIO P. 1035 N EMPORIA, 67214
267-3389
34 M 74807 62 OBG
BARBA, ESTRELLA G. 1035 N EMPORIA, 67214
262-1853
41 F 74802 66 CHP
BARKER, BENJAMIN W. 1148 S HILLSIDE, 67211
683-4647
18 M 1902 51 FP
BARNETT, ARNOLD M. 3243 E MURDOCK, 67208
685-2377
32 M 83601 54 N
BARTLETT, WAYNE C. 3244 E DOUGLAS, 67208
689-9124
07 M 1601 31 GS
BASS II, ORAL E. 851 N HILLSIDE, 67214
685-1371
40 M 2803 71 U
BATES, MICHAEL D. 2703 EAST CENTRAL, 67214
685-1277
48 M 3005 74 D8G
BAUMAN, M LEON. 1629 UNIVERSITY, 67213
-
01 M 1902 44 OD
BAUMANN, PAUL A. 3333 E CENTRAL, 67208
685-1291
32 M 5605 57 R
BEAVER, JAMES L. 959 N EMPORIA, 67214
263-3262
09 M 2101 35 GS
BEBAK, DONALD M. 2322 E CENTRAL, 67208
263-6186
32 M 3508 58 ANES
BECKER, KARL EDMUND. 3243 E MURDOCK, 67208
686-7327
43 M 2307 69 ANES
BENZ, LAURIE J. VETERANS HOSP, 67207
685-2221
39 F 4101 65 IM
BETHEL, CHANDLER S. 5107 E 21ST ST, 67208
682-6559
34 M 1902 59 IM
BHARGAVA, BAIKUNTH N. 959 N EMPORIA, 67214
267-8322
37 M 49530 63 U
BIERMANN, HENRY J. 425 E MURDOCK, 67214
265-6287
27 M 3006 52 GS
BIERMANN, WILLIAM J. 1435 LIEUNETT, 67203
-
04 M 3006 29 OD
BINYDN, KERNIE W. 4618 E CENTRAL, 67208
684-2819
24 M 1902 56 FP
BLAYLOCK, HOYT C. 835 N HILLSIDE, 67214
685-4395
21 M 1902 45 OD
BLDDO, MARY J. 647 N HILLSIDE, 67214
682-4559
13 F 1902 49 PD
BLOUSTEIN, PAUL A. WESLEY MEDICAL CENTFR, 67218
685-2151
42 M 3519 67 PATH
BOLT, MICHAEL. ST FRANCIS HOSP, 67214
268-5000
M
BOND, RDGER C. 3243 E MURDOCK, 67208
684-0251
40 M 5606 67 CD

BOSILJEVAC, JOSEPH E, WESLEY MED CENTER, 67214
685-2151

BOWMAN, HAROLD S, 1441 NORTH ROCK RD, 67206

04 M 2802 30 DO
BOYO, Z REX, 120 S MAIZE RD #12, 67209
262-6211

26 M 3005 52 FP
BOYLE, HUGH H, 424 N WOODLAWN, 67208
686-2193

33 M 3806 60 PATH
BRAKE, DAVID, 3333 E CENTRAL, 67208
685-1291

43 M 702 68 R
BRAUN, KENNETH, 1431 S BLUFFVIEW, 67207
638-4688

47 M 3519 72 OPH
BRAUN, THOMAS G, 3243 NORTH MURDOCK #601, 67208
685-2377

35 M 6001 61 N
BRAUN III, WILLIAM T, 3333 E CENTRAL, 67208
685-1291

37 M 2802 61 R
BRECKBILL, DAVID L, 3333 EAST CENTRAL #214, 67208
685-1291

38 M 1902 64 R
BRINTON, E HOLMES, 3244 E DOUGLAS, 67208
689-9124

46 M 2101 70 G5
BRINTON, EDWARD S, 329 NORTH TERRACE DR, 67208

15 M 1611 41 DO
BRITO, RAUL E, 3243 E MURDOCK, 67208
682-4523

32 M 31901 59 U
BROSIOUS, FRANK C, 3243 E MURDOCK, 67208
684-0251

25 M 1902 49 1M
BROWN, DAVID J, 425 EAST MURDOCK, 67214
265-6287

45 M 1902 71 G5
BROWN, ROBERT L, 5025 E KELLOGG, 67218
682-1534

21 M 1902 49 FP
BROWN, RONALD C, 3243 E MURDOCK, 67208
685-8231

47 M 2803 73 FP
BROWN, RONALD L, 303 S HILLSIDE, 67211
684-7251

45 M 3901 71 ANE5
BRDWN, VAL J, 1802 N HYDRAULIC, 67214
265-1461

24 M 1003 47 FP
BROWNING, WILLIAM H, 851 N HILLSIDE, 67214
685-1371

16 M 1902 43 U
BRUNER JR, KENNETH W, ST FRANCIS HOSPITAL, 67214
268-5470

44 M 2401 70 PATH
BUBECK, RALPH W, 3244 E DOUGLAS, 67208
689-9396

36 M 1803 62 1M
BUCK JR, BEN H, 5105 E 21ST, 67208
684-2081

17 M 2834 43 TS
BURNEY, WILLIAM W, 1755 N MADISON, 67214
264-8311

17 M 1902 52 FP
BURPEE, JAMES F, 851 N HILLSIDE, 67214
685-1371

39 M 5605 66 U
BUTH, DENNIS K, 2916 EAST CENTRAL, 67214
684-5243

45 M 1902 72 1M
BUTIN, J WALKER, 3244 E DOUGLAS, 67208
689-9477

23 M 1902 47 1M
BYRNE, JAMES PERRY, 905 N EMPORIA, 67214
263-0296

42 M 2101 68 C5
CALIFNOD JR, DANIEL J, WESLEY MED CENTER, 67214
685-2563

41 M 1902 67 EM
CAPPER, STANLEY L, 3244 E DOUGLAS, 67208
689-9206

37 M 1803 67 D
CARREAU, ERNEST P, 5105 E 21ST, 67208
682-0281

17 M 1902 44 G5
CARTER, MACK A, 3333 E CENTRAL, 67208
684-5158

18 M 1902 50 DPH

CARTWRIGHT, LYLE B, 1520 S CLIFTON, 67218
722-2148

37 M 3901 65 DM
CASEY, JOHN J, 3243 E MURDOCK, 67208
685-2377

25 M 2604 49 NS
CAUBLE, WILBUR G, 1148 S HILLSIDE, 67211
683-1681

12 M 2834 39 G5
CAWLEY, LEO P, WESLEY MED CENTER, 67214
685-2151

22 M 3901 52 PATH
CHANG, FREDERIC C, 905 N EMPORIA, 67214
263-0296

35 M 2401 59 G5
CHAPMAN, JAMES H, POST OFFICE BOX 11344, 67211
265-1684

27 M 4706 63 R
CHARD, FREDERICK H, 3244 E DOUGLAS, 67208
689-9129

15 M 5605 39 D
CHO, SECHIN, UKSM - WICHITA, 67214
268-8302

47 M 58302 71 PO
CHRISTMAN, CARL G, 345 N HILLSIDE, 67214
683-7539

48 M 4802 74 D8G
CLARK, COURTNEY, 303 S HILLSIDE, 67218
684-7251

30 M 1902 56 ANE5
CLEAVER, EDGAR M, 1900 EAST 9TH, 67214
268-8391

26 M 3005 54 PH
CLIFTON, H DAVID, 3600 E HARRY, 67218
685-1111

41 M 401 65 R
COHEN, JUSTIN THOMAS, 3333 E CENTRAL STE 1, 67206
684-5158

47 M 2803 74 DPH
COHLMIA, JERRY B, 1035 N EMPORIA, 67214
263-5891

43 M 1902 70 1M
COLEMAN, THOMAS J, 959 N EMPORIA, 67214
265-0749

18 M 3545 51 1M
COLLIER, HAROLD W, 303 SOUTH HILLSIDE, 67211
684-7251

45 M 1902 71 ANE5
CONCEPCION JR, EUGENIO S, 1152 SOUTH CLIFTON, 67218
681-2401

39 M 74802 64 CD
CONRARROY, PETER A, 3243 E MURDOCK, 67208
686-7327

42 M 502 69 ANE5
COOK, G EDWARD, ST JOSEPH HOSPITAL, 67218
685-1111

42 M 401 67 R
CODK, O RAY, 315 N HILLSIDE, 67214
686-3391

42 M 2012 71 FP
CORRIGAN, GEORGE F, 1828 W 18TH, 67203

95 M 3006 20 DO
COSMAN, F PRICE, 851 N HILLSIDE, 67214
685-1371

28 M 1902 57 U
COWLES, GEORGE E, 47 MISSIDN RD, 67206

96 M 1902 21 DO
COWLES, GORDON T, 3333 E CENTRAL, 67208
683-2661

32 M 1902 58 D8G
CRANE, DAVID D, 929 N ST FRANCIS, 67214
262-6211

34 M 2501 60 PATH
CRISWELL, MILDRED LOUISE, 1520 SOUTH CLIFTON, 67218
685-2371

42 F 1902 67 EM
CRONIN, DONALD J, 3244 E DOUGLAS, 67208
689-9227

16 M 2604 40 ENT
CROW, ERNEST W, 3243 E MURDOCK, 67208
684-0252

20 M 1902 44 CD
CROWLEY, EDWARD X, 345 N HILLSIDE, 67214
682-4519

14 M 1643 39 GYN
CUMMINGS, RICHARD J, 427 N HILLSIDE, 67214
686-6608

32 M 1902 57 OTD
DAVENPORT, S SCOTT, 3333 E CENTRAL, 67208
684-8811

30 M 401 61 N

DAVIDSON, HARRY T. 556 N BROADVIEW, 67208

87 M 3802 11 00
 DAVIS, PAUL H. 315 N HILLSIDE, 67214
 685-8231
 47 M 3901 72 FP
 DAVIS, RONALD B. 1148 S HILLSIDE, 67211
 685-2152
 46 M 1902 72 FP
 DAY, HOWARD. 1035 N EMPORIA -SUITE 235, 67207
 263-5891
 48 M 1902 74 NEP
 DE BAKKER, JAN B. 1035 N EMPORIA, 67214
 263-4903
 25 M 5104 59 GS
 DECKERT, ROSALIE E. 3244 EAST DOUGLAS, 67208
 689-9212
 47 F 2803 73 IM
 DEJONG, DAVID C. ST FRANCIS HOSPITAL, 67214
 262-6211
 33 M 2501 59 PATH
 DEMOSS, ELEANOR P. 3333 E CENTRAL #204, 67208
 682-5591
 42 F 74802 66 PD
 DOLAN JR, PHILIP JARVIS. 3244 E DOUGLAS, 67208
 689-9477
 47 M 2101 73 GE
 DONNELL, JAMES M. 3306 E CENTRAL, 67208
 682-6121
 28 M 1902 55 FP
 DOORNBOS, J FRED. 929 N ST FRANCIS, 67214
 262-6211
 28 M 1902 57 R
 DOWNING, GREGORY. 1001 N MINNEAPOLIS, 67214

M 1902
 DRAKE, RALPH L. 4422 E 3RD, 67208

99 M 4102 26 00
 DREVEITS, CURTIS C. 3244 E DOUGLAS, 67208
 689-9178
 30 M 1902 56 IM
 DRIGGS, GUY K. ST FRANCIS HOSP, 67214
 268-5000
 M
 DRUET, ROBERT L. WESLEY MEDICAL CENTER, 67230
 685-2151
 35 M 1902 62 PATH
 QUICK, GREGORY. 1035 NORTH EMPORIA #130, 67214
 263-3271
 46 M 1643 72 CO
 DURAND, ANTONIO C. 959 N EMPORIA, 67214
 263-7893
 29 M 74807 56 U
 DWORZACK, DAVID L. ST FRANCIS MED PAVILLON, 67207
 262-6211
 48 M 1902 73 IM
 DYCK, CORA E. 702 WAVERLY, 67218

00 F 1902 26 00
 DYCK, GEORGE. 1001 N MINNEAPOLIS, 67219
 268-8388

37 M 6201 64 P
 DYER, VERNON E. 3244 EAST DOUGLAS, 67208
 689-9234

36 M 301 72 OBG
 ECKERT, WILLIAM G. ST FRANCIS LAB, 67214
 262-6211

26 M 3519 52 PATH
 EDWARDS, MANIS C. 3333 E CENTRAL, 67208
 683-2661

33 M 3005 58 OBG
 EDELHOF, RICHARD H. 925 NORTH EMPORIA, 67214
 263-1299

45 M 1902 73 FP
 ELLIS, HARVEY O. 6611 E CENTRAL, 67206
 683-1022

24 M 1902 55 GS
 ELNEN, WALTER T. 460 N TERR DR, 67208
 682-5671

03 M 1643 32 GS
 EMERY, FRANK A. 10 ST JAMES PLACE, 67206

05 M 2802 29 00
 ERKEN, RONALD V. 3101 E 9TH, 67214
 684-0201

29 M 2834 56 P
 EVANS, FARRIS D. 521 RUTLAND RD, 67206

05 M 1902 32 FP
 EVANS, GRANT E. 3333 E CENTRAL, 67208
 682-1391
 21 M 4901 46 FP

EYSTER, ROBERT L. 3243 E MURDOCK, 67208

685-1491
 47 M 3901 73 ORS
 FARHA, GEORGE J. 905 N EMPORIA, 67214
 263-0296
 27 M 2101 57 GS
 FARHA, S JIM. 905 N EMPORIA, 67214
 263-0296
 31 M 1001 57 TS
 FENDER JR, THOMAS H. 9400 E LINCOLN, 67207
 267-8439
 25 M 4812 54 OS
 FERRIS, BRUCE G. 825 N EMPORIA, 67214
 262-3495
 43 M 1902 69 PS
 FEUILLE JR, EDMOND G. 345 N HILLSIDE, 67214
 682-4572
 50 M 4802 75 OBG
 FINLEY, DENNIS R. 1035 N EMPORIA, 67214
 262-7429
 36 M 1606 62 ORS
 FIRKINS, RICHARD T. 1035 N EMPORIA, 67214
 263-5865
 31 M 1803 56 ENT
 FISHER, JAMES B. 3244 E DOUGLAS, 67208
 689-9477
 09 M 1902 36 GE
 FITZGERALD, EDWARD J. 3600 E HARRY, 67218
 685-1111
 22 M 3006 50 R
 FITZIG, SANFORD. 3244 E DOUGLAS, 67208
 689-9344
 46 M 4102 72 U
 FLECKENSTEIN, CHARLES S. PO BOX 125, 66521

07 M 1902 36 00
 FLEMING, FORNEY W. 3243 E MURDOCK #200, 67208
 685-1491

43 M 4802 69 ORS
 FLOWERS JR, CLELL B. 855 N HILLSIDE, 67214
 685-1381

22 M 1902 55 FP
 FORD, CHARLES R. 1301 N WEST ST, 67203
 942-4279

38 M 1902 63 OPH
 FOWLER, ROBERT J. 3244 E DOUGLAS, 67208
 689-9236

37 M 2802 63 IM
 FRANCIS, NORTON L. 5205 E 21ST, 67208
 684-2838

10 M 3005 35 ENT
 FRITZ, GEORGE E. WESLEY MED CENTER, 67214
 685-2151

18 M 2507 43 PATH
 FRITZEMEIER, WILLIAM H. 835 N HILLSIDE, 67214
 685-4395

14 M 1902 41 D
 FROMM, ARTHUR H. 315 N HILLSIDE, 67214
 685-2281

37 M 1902 63 FP
 FULTON, JOHN K. 3333 E CENTRAL, 67208
 686-0732

18 M 5605 43 PUO
 GALICHIA, JOSEPH P. PC BOX 594, 67201
 263-3271

42 M 1902 69 CD
 GALVAN, ALONSO. 3243 E MURDOCK, 67208
 684-0251

38 M 64906 64 IM
 GENILO, AMANCIO C. 1520 SOUTH CLIFTON, 67218
 685-2371

37 M 74801 61 EM
 GENILO, CELESTE A. 3244 EAST DOUGLAS, 67208
 689-9445

39 F 74801 62 ANES
 GEORGE, EARL F. 406 E CENTRAL, 67202
 265-6991

35 M 1902 65 FP
 GEORGE, M DON. 3101 E NINTH, 67214
 268-8388

31 M 1001 56 P
 GERBER, ALLEN D. 5105 E 21ST, 67208
 682-0281

48 M 1902 71 GS
 GESSLER, DONALD J. 1122 N TOPEKA, 67214
 265-2876

41 M 1902 67 FP
 GILMARTIN, RICHARD C. 3243 E MURDOCK #601, 67208
 685-2377

32 M 4101 58 PDN
 GIVNER, DAVID. 611 N HILLSIDE, 67214
 684-0501

03 M 2301 29 IM

GOERING, ROBERT C. 3600 E HARRY, 67218
 685-1111
 25 M 64901 56 PATH
 GOLO, JAY H. 550 NORTH HILLSIDE, 67214
 685-2151
 47 M 2401 73 PATH
 GOLDBERG, HERBERT R. 400 N WOODLAWN, 67208
 685-4215
 33 M 3508 59 PD
 GONZALEZ, FRANCISCO, 1035 NORTH EMPORIA #265, 67214
 265-3226
 46 M 73706 70 IM
 GONZALEZ, HIRAM, 1035 N EMPORIA, 67214
 262-1853
 20 M 64901 52 P
 GODPASTURE, HEWITT C. 1001 N MINNEAPOLIS, 67214
 262-6211
 43 M 1902 69 IM
 GOULDNER, RENE M. 139 COURTLIGH OR, 67218
 -
 88 M 3501 18 DD
 GDYLE, KRISHAN K. 1111 N ST FRANCIS, 67206
 265-2613
 34 M 49529 63 CD
 GOYLE, VIMAL, 1111 N ST FRANCIS, 67206
 265-2316
 41 F 49529 65 OBG
 GRAUEL, CHARLES W. 8310 CHALET, 67208
 262-1127
 44 M 1902 70 ANES
 GRAVES, JACK W. 3244 E DOUGLAS, 67208
 689-9124
 17 M 1902 42 GS
 GRAY, C LUCIEN, 4821 E CENTRAL, 67208
 684-5171
 21 M 1902 45 ENT
 GRAY, H TOM, 3244 E DOUGLAS, 67208
 689-9152
 19 M 401 44 O
 GREER, JAMES A. 3244 EAST DOUGLAS, 67208
 689-9227
 43 M 1611 69 OTO
 GRIBBLE, ROBERT N. 3600 E HARRY, 67218
 262-6211
 43 M 1902 69 R
 GRILLOT, FLDYD B. 814 S WOODLAWN, 67218
 684-0243
 18 M 1902 51 FP
 GRDHS, HEINZ K. 550 NORTH HILLSIDE, 67214
 685-2151
 42 M 15407 66 PATH
 GRUND, FRANK M. 3244 EAST DOUGLAS, 67208
 689-9420
 47 M 1803 72 IM
 GRUSHNYS, ARNDLD, 3244 E DOUGLAS, 67206
 689-9445
 19 M 40721 59 ANES
 GSELL, GEORGE F. 3244 E DOUGLAS, 67208
 689-9316
 07 M 1601 33 DPH
 GUNTHER, LORETTA ANN, 550 N HILLSIDE, 67214
 685-2563
 39 F 4107 65 GS
 GUTHRIE, RICHARD A. 1001 N MINNEAPOLIS, 67214
 268-8228
 35 M 2803 60 PD
 HAGAN, C THOMAS, 959 N EMPORIA, 67214
 265-0789
 16 M 3006 42 IM
 HAGAN, FRANCIS J. PD 8DX 1837, 67201
 262-1057
 13 M 3006 39 FP
 HALE, RALPH, 847 S HILLSIDE, 67211
 684-0295
 18 M 1902 46 A
 HALL, J ROGER, 3333 E CENTRAL, 67208
 685-5227
 42 M 4802 68 DPH
 HALPIN, EDWARD D. 1148 S HILLSIDE, 67211
 685-9229
 33 M 1902 62 OBG
 HARMS, EDWIN M. 5623 POLD DR, 67208
 -
 06 M 3901 34 OO
 HARRIS, FRANK H. 1035 N EMPORIA, 67214
 262-1853
 09 M 1001 39 NP
 HARRISON, A BROOKS, 1040 STRATFORD, 67206
 -
 99 M 1902 25 DO
 HARRISON, PAUL BARRY, 3243 EAST MURDOCK, 67208
 685-6222
 49 M 1902 74 GS
 HART, OILLIS L. 5105 E 21ST, 67208
 684-2081
 36 M 3901 64 GS
 HARVEY, ROSEMARY B. 1801 E 10TH, 67214
 265-5674
 24 F 1902 49 ADM
 HATRUP, RICHARD J. 610 N TYLER RD, 67212
 681-3016
 31 M 3006 57 FP
 HAWLEY, RAYMOND G. ST JOSEPH HOSP, 67218
 685-1111
 39 M 1902 65 PATH
 HAYES, WILLIAM L. 3243 E MURDOCK, 67208
 684-0251
 28 M 1902 53 CO
 HAYS, THOMAS H. 315 NORTH HILLSIDE, 67206
 681-1841
 49 M 1902 75 FP
 HENNING, CHARLES E. 320 N HILLSIDE, 67214
 682-3221
 37 M 1902 63 ORS
 HENSLEY JR. CLINE D. 3244 E DOUGLAS, 67208
 689-9272
 20 M 1902 44 DRS
 HEREO, JOHN, 959 N EMPORIA, 67214
 262-3613
 41 M 2802 67 N
 HERSHORN, SIMON E. 3333 E CENTRAL, 67208
 685-1291
 22 M 1902 46 R
 HIEBERT, ABRAHAM E. 1530 W 13, 67203
 -
 94 M 2802 25 DD
 HINSHAW, ALFRED H. 6110 ONEIDA, 67208
 -
 07 M 1902 33 DD
 HINSHAW, CHARLES T. 256 N BLECKLEY DR, 67208
 682-8651
 99 M 4705 26 PD
 HIRATZKA, TOMIHARU, 550 N HILLSIDE, 67214
 685-2151
 13 M 511 43 PATH
 HIZDN, RAMON R. ST FRANCIS HOSP, 67214
 262-6211
 38 M 74801 62 DR
 HODGSON, ROBERT B. 841 NORTH BROADWAY, 67207
 263-6131
 22 M 1902 47 FP
 HODSDON, HERVEY R. 1122 S CLIFTON, 67218
 -
 03 M 1606 31 OO
 HOLDEN JR. RAYMOND F. 262 SOUTH BROOKSIDE, 67208
 -
 10 M 2802 33 DD
 HOLLADAY, HARMON M. 327 N RUTAN, 67208
 681-0431
 23 M 1902 52 ANES
 HOLMES, JEO. ST JOSEPH MED CTR - FP, 67218
 -
 M
 HORBELT, DOUGLAS V. 3333 E CENTRAL, 67208
 682-6511
 47 M 4802 72 OBG
 HOSHOLDOR, DANIEL FAIR, ST FRANCIS HOSPITAL, 67214
 262-6211
 43 M 1902 70 R-NM
 HOSHOLDER, MARTHA S. 835 NORTH HILLSIDE, 67207
 685-4395
 46 F 1902 72 D
 HOWARD, DONALD D. 959 N EMPORIA, 67214
 265-7241
 11 M 1902 38 DPH
 HUEBERT, DEAN A. 5025 E KELLDOG, 67218
 682-1534
 22 M 1902 46 FP
 HULL, KENNETH L. 1035 N EMPORIA, 67214
 265-7903
 38 M 2301 69 P
 HULTGREN, MYRON K. 855 N HILLSIDE, 67214
 685-1381
 41 M 1902 68 FP
 HUME, JOSEPH W. 3243 E MURDOCK, 67208
 685-2223
 38 M 1902 69 OBG
 HUMMER, LLOYD M. 3244 E DOUGLAS, 67208
 689-9323
 32 M 3901 57 IM
 HUSTEAD, ROBERT F. 2401 N PERSHING, 67220
 681-0431
 28 M 801 54 ANES
 HYNES, HARRY E. 1035 N EMPORIA, 67214
 262-4467
 35 M 53902 58 HEM

IBARRA, J LUIS, 1035 N EMPORIA, 67214
262-1853
20 M 64901 46 P
JACKSON, CHARLES R, 1035 N EMPORIA, 67214
263-0812
27 M 1606 53 G5
JAMES, VERNON L, 400 N WOODLAWN, 67208
268-8302
29 M 3601 55 PO
JAWAD, M HUSAIN, V A 5500 E KELLOGG, 67218
685-2221
47 M 49521 71 IM
JAZAYERLI, NABIL, 1152 S CLIFTON, 67218
681-2401
44 M 87501 70 CO
JEHAN, SAYED S, MENTAL HEALTH CLINIC, 67214
268-8251
33 M 70403 59 P
JENNEY, CHARLES B, 905 N EMPORIA, 67214
263-2795
34 M 2834 61 G5
JESTER, SHELBY L, 3243 EAST MURDOCK #101, 67208
686-7327
43 F 4102 74 ANES
JOHNSON, GARY L, 3600 E HARRY, 67218
-
M
JOHNSON, THOMAS E, 3333 E CENTRAL, 67208
685-1291
41 M 1643 67 R
JONES, CLIFFORD E, 1148 S HILLSIDE, 67211
685-3354
22 M 1902 50 FP
JUDILLA JR, FRANCISCO, 2322 EAST CENTRAL, 67214
263-6186
44 M 74801 71 ANES
KADISDN, HERBERT I, ST FRANCIS HOSP, 67214
262-6211
44 M 1611 69 R
KARDATZKE, E STANLEY, 1301 N WEST ST, 67203
943-9342
39 M 1720 64 FP
KARDATZKE, JON K, 1301 N WEST ST, 67203
943-3271
36 M 1720 62 FP
KASHA, ROBERT L, 5025 E KELLOGG, 67218
684-0181
11 M 2834 38 G5
KASSERBAUM, KENNETH G, 3420 EAST DOUGLAS, 67208
685-6381
M 1606 60 CHP
KAUFMAN, EUGENE E, 3243 E MURDOCK, 67208
685-1491
30 M 1902 56 DR5
KEENE, GEORGE H, 5025 E KELLOGG, 67218
682-1534
20 M 1902 49 G5
KEENEY, M GARY, 841 N BROADWAY, 67214
263-6131
36 M 1902 66 FP
KELLER, JAMES P, 1431 SOUTH BLUFFVIEW, 67218
685-1284
48 M 1902 74 IM
KELLY, ROBERT W, 3333 EAST CENTRAL #301, 67206
682-6511
46 M 4802 72 DRG
KENDALL, TOM E, 825 N EMPORIA, 67214
262-3495
37 M 3901 62 P5
KENDRICK, J GILLERAN, 3333 E CENTRAL, 67208
682-6511
20 M 1902 46 DRG
KENNEDY, GERALD T, 16069 CAVALCADE LANE, 67230
684-5243
35 M 1902 61 GE
KHICHA, GYANCHAND J, 905 N EMPORIA, 67214
263-0296
37 M 49530 61 THCS
KHOURY, GEORGE H, 3333 E CENTRAL, 67208
681-2021
32 M 33002 55 PO
KIM, PAIK N, 1035 N EMPORIA, 67214
262-4467
33 M 58302 58 HEM
KIMBLE, JAMES A, 3244 E DOUGLAS, 67208
689-9316
45 M 702 71 DPH
KIRK JR, E DAVID, 1431 S BLUFFVIEW DRIVE, 67218
685-1351
34 M 1902 62 IM
KISER, JOHN L, 3243 E MURDOCK, 67208
685-6222
37 M 2802 62 G5

KISER, WILLARD J, 3243 E MURDOCK, 67208
685-6222
05 M 4705 30 G5
KITCHEN, ROBERT R, 3420 E DOUGLAS, 67208
685-2355
26 M 1902 52 CHP
KNAPP, LESLIE E, 302 SOUTH CRESTWAY, 67218
-
96 M 1902 25 OO
KNAPP, M ROBERT, 37 VIA ROMA, 67230
684-7251
23 M 3519 47 ANES
KNAPPENBERGER, ROY C, 3244 E DOUGLAS, 67208
689-9327
16 M 1902 41 PO
KNEIDEL, THOMAS W, 925 N EMPORIA, 67214
262-3476
40 M 4101 66 DR5
KOURI, SAMMY H, 3243 E MURDOCK, 67208
682-2911
33 M 3901 57 G5
KRAUSE, ROLAND L, 855 N HILLSIDE, 67214
685-1381
25 M 1902 53 IM
KRUPKA, JOHN J, 959 N EMPORIA, 67214
262-3613
47 M 1642 73 N5
KUBINA, GLENN RICHARD, 5205 E 21ST, 67208
684-2838
47 M 3840 72 DTO
KURTH, C JOSEPH, 925 N EMPORIA, 67214
263-6177
10 M 3006 35 NP
KUTILEK, FRANK J, 10300 WEST CENTRAL, 67212
722-4258
30 M 1902 57 FP
LACEY, STEFFAN R, ST FRANCIS HOSP, 67214
268-5000
M 1902
LAHAM, ALEXANDER J, ROUTE 3 BOX 87, 67010
683-4658
20 M 1902 44 IM
LAT, JENG Y, 1111 N ST FRANCIS, 67214
265-2613
41 M 38502 67 TS
LAMBERT, EUGENE KENT, 3244 E DOUGLAS, 67208
689-9214
44 M 1611 70 IM
LANCE JR, JOHN F, 3244 E DOUGLAS, 67208
689-9438
20 M 1902 45 DR5
LATIMER, KATHERINE, 3243 EAST MURDOCK, 67206
686-7327
49 F 1205 75 ANES
LAUVER, MARY ANN, 1001 N MINNEAPOLIS, 67214
268-8302
40 F 1902 74 PD
LAWN, RAYMOND A, 715 N MISSION RD, 67206
683-8991
09 M 2604 35 AM
LAZAR, HARRY, 611 N HILLSIDE, 67214
684-0501
08 M 1611 35 A
LEE, R REX, 6155 E HARRY, 67218
685-2306
29 M 3901 55 FP
LEE, SANG OUG, 1001 N MINNEAPOLIS, 67214
263-8388
42 M 58304 67 P
LEE JR, EDWARD S, 2002 E 17TH ST, 67214
264-8273
09 M 4707 37 FP
LEISY, JERALD W, 3420 E DOUGLAS, 67208
684-0201
42 M 1902 68 P
LEVINE, WILLIAM R, UKSM-WICHITA, 67214
268-8388
42 M 1902 67 P
LIES, JAMES E, 3244 E DOUGLAS, 67208
689-9240
43 M 1902 69 IM
LIES, RICHARD B, 3244 E DOUGLAS, 67208
689-1111
42 M 1902 68 RHU
LIN, JOE J, 929 N ST FRANCIS, 67214
262-6211
42 M 24404 69 PATH
LINDLEY, MILTON E, 657 S TERRACE DR, 67218
-
14 M 1902 50 DO
LINHARDT, RONALD O, 3243 E MURDOCK, 67208
683-2655
36 M 2803 64 DRG

LITTLE, L GILBERT, 122 S WESTFIELD AVE, 67209
 263-7614
 99 M 401 27 P
 LOCKHART, JOSEPH G, 5900 E CENTRAL, 67208
 684-7239
 17 M 4113 43 PD
 LOEFFLER, JAMES A, 400 N WOODLAWN, 67206
 685-5375
 36 M 3841 63 A
 LOEWEN, HENRY H, 2142 WEST 17TH, 67203
 -
 03 M 1902 35 DD
 LOEWEN, WILLIAM C, 10300 W MAPLE, 67209
 943-3253
 41 M 1902 71 FP
 LOGAN, GEOFFREY G, 345 N HILLSIDE, 67214
 682-4572
 31 M 14303 56 OBG
 LORCH, VICHIE, UKSM-WICHITA, 67214
 268-8302
 40 M 89101 65 PD
 LOVETT, PAUL A, 110 PATTON, 67208
 683-6683
 09 M 1902 45 ORS
 LOW, HAROLD L, 201 S PERSHING, 67218
 684-2858
 18 M 1902 44 FP
 LUEKEN, LUEKE B, 3244 E DOUGLAS, 67208
 689-9234
 23 M 40723 52 OBG
 LUELLEN, THOMAS J, 3244 E DOUGLAS, 67208
 689-9244
 17 M 1902 41 IM
 LUZZATI, ENZO F, ST FRANCIS HOSPITAL, 67214
 262-6211
 25 M 56119 50 R
 MADISON JR, WARON N, 3600 E HARRY, 67218
 686-9432
 37 M 3601 62 PATH
 MAGIDSON, ELLIOT ARTHUR, 424 N WOODLAWN, 67208
 686-2193
 43 M 1611 68 PATH
 MANNING, ROBERT T, WESLEY MED CTR/M ED, 67214
 689-3193
 27 M 1902 54 IM
 MANSOUR, BADIE S, 3243 E MURDOCK S 101, 67208
 686-7327
 45 M 33002 69 ANES
 MARSH, HENRY O, 925 N EMPORIA, 67214
 262-3476
 18 M 1611 43 ORS
 MARTIN JR, GLEN E, 2322 E CENTRAL, 67214
 263-6186
 20 M 1902 49 ANES
 MARYMONT JR, JESSE H, WESLEY MED CENTER, 67214
 685-2151
 28 M 3515 54 PATH
 MASTIO JR, GEORGE J, 3243 E MURDOCK, 67208
 684-5235
 25 M 1902 52 GS
 MATASSARIN, BENJAMIN M, 2916 E CENTRAL, 67214
 684-5243
 20 M 1902 45 IM
 MATASSARIN, FREDERICK W, 734 N EMPORIA, 67214
 265-2382
 15 M 1902 37 U
 MAWDSLEY, MICHAEL W, 3333 EAST CENTRAL #610, 67208
 686-6659
 49 M 1902 74 PD
 MCBRIDE, ANN, ST JOSEPH MED CENTER, 67211
 685-1111
 F
 MCCLANAHAN, WARD A, 5105 E 21ST, 67208
 684-8211
 22 M 3005 48 ORS
 MCCLELLAN, ERNEST L, 3243 E MURDOCK, 67208
 686-7327
 38 M 4802 70 ANES
 MCCOY, CHARLES P, 3333 E CENTRAL, 67208
 682-6511
 17 M 3006 42 OBG
 MCGUIRE, WILLIAM F, 3333 E CENTRAL, 67208
 683-5655
 17 M 4101 43 PD
 MCMAHON, MERRI M, 1001 NORTH MINNEAPOLIS, 67214
 248-8378
 46 F 5404 72 IM
 MEADOWS, DONALD C, 3333 E CENTRAL, 67208
 683-5611
 36 M 102 69 OPH
 MEEKER II, BRUCE P, 345 N HILLSIDE, 67214
 686-3384
 30 M 1902 58 OBG

MEHRA, PRDMILLA, 2810 EAST 21ST STREET, 67214
 681-1901
 40 F 63 FP
 MELEAN, JAIME, 1152 SOUTH CLIFTON, 67208
 681-2401
 40 M 65 CD
 MELVIN, DAVID B, 905 NORTH EMPORIA, 67214
 263-0296
 42 M 4706 67 TS
 MENAKER, JEROME S, 2703 E CENTRAL, 67214
 685-1227
 16 M 1005 41 OBG
 MENDIONES, L MARLENE, 835 N HILLSIDE, 67214
 685-4395
 45 F 1611 70 O
 MENDIONES, RUPERT D, 3243 E MURDOCK -SUITE 404, 67208
 682-6585
 44 M 1611 71 IM
 MENEHAN, H JAMES, 3244 E DOUGLAS, 67208
 689-9404
 26 M 1902 53 PD
 MENKING, F W MANFRED, 3244 E DOUGLAS, 67208
 689-9336
 34 M 40715 61 PD
 MERCADER, MARID S, 2322 E CENTRAL, 67214
 263-6186
 43 M 74801 64 ANES
 MEREDITH, W TOM, 1035 N EMPORIA, 67214
 263-7285
 35 M 4812 61 IM
 MERRITT, JOE P, 2703 E CENTRAL, 67214
 685-1277
 46 M 2802 71 OBG
 MERSHON, JAMES C, 925 N EMPORIA - SUITE A, 67214
 263-3271
 37 M 1803 63 IM
 MEULBRDEK, HARVEY J, 3244 E DOUGLAS, 67208
 689-9156
 31 M 5605 56 A
 MEYER, WARREN E, 1144 S CLIFTON, 67218
 684-5237
 27 M 1606 51 GS
 MICHELBAACH, ALBERT P, 2916 E CENTRAL, 67214
 684-5243
 35 M 2101 61 IM
 MILFELD, DOUGLAS J, 905 N EMPORIA, 67214
 263-0296
 45 M 8404 72 TCS
 MILLER, CLYDE W, 7618 ODNEGAL, 67206
 -
 09 M 2002 36 DO
 MILLER, DON E, 4145 E KELLOGG, 67218
 682-6551
 20 M 2802 44 GS
 MILLER, LAWRENCE H, 1131 SOUTH CLIFTON, 67218
 685-4354
 40 M 1001 67 FP
 MILLER, PHILIP A, 5105 E 21ST, 67208
 684-2081
 44 M 1902 70 GS
 MILLS, CHARLES D, 1144 S WATER, 67213
 -
 89 M 2002 14 OO
 MILLS, GEORGE QUINTON, 550 N HILLSIDE, 67214
 -
 48 M 3006 73 PATH
 MIRZA, MEDO, 3333 E CENTRAL, 67208
 686-6683
 38 M 40733 64 PDS
 MOORE, DENNIS F, 1035 N EMPORIA, 67214
 265-3226
 36 M 2101 62 HEM
 MORGAN, DICK A, 3243 E MURDOCK, 67208
 686-7327
 43 M 3901 69 ANES
 MORGAN, JAMES I, 3124 S SENECA, 67217
 522-2266
 29 M 1606 53 FP
 MORGAN III, LOUIS S, 8030 E KELLOGG, 67207
 683-3811
 22 M 3901 48 FP
 MORROW, THOMAS F, 3310 E DOUGLAS, 67208
 685-1443
 21 M 5606 46 P
 MOSELEY, JACK E, 1120 S CLIFTON, 67218
 682-4982
 25 M 3901 53 FP
 MOSIER, STANLEY JAY, 3243 E MURDOCK, 67208
 685-8231
 42 M 1902 68 FP
 MOTKALLEN, MOHAMMED, 1111 NORTH ST FRANCIS, 67206
 265-2613
 44 M 51701 68 IM

MOY, JAMES T. 3028 E 2ND.67214
682-1392
14 M 4102 40 IM

MUELLER, VERNETTE A. 1431 S BLUFFVIEW.67218
684-3981
17 M 2802 41 OBG

MULLINIX, JANICE M. 3243 MURDOCK.67208
685-2377
47 F 3006 73 N

MURPHY, BARRY L. 3243 EAST MURDOCK #500.67208
684-0251
45 M 1902 71 IM

MURPHY, QUANE A. 3243 E MURDOCK.67208
685-1491
32 M 1902 65 ORS

MURPHY, PAUL M. 3600 E HARRY.67208
685-1111
28 M 3006 51 R

MURRAY, KENT B. 841 N BROADWAY.67214
263-6131
47 M 3901 73 IM

NELSON, GERALD O. 825 N EMPORIA.67214
262-3495
34 M 1902 60 PS

NELSON, RUSSELL ALAN. 3333 E CENTRAL.67208
685-5271
18 M 1902 45 PO

NELSON JR, GUST H. 3600 E HARRY.67218
685-1111
23 M 1902 46 OR

NESMITH, LESLIE W. 3333 E CENTRAL.67208
683-5611
40 M 1902 66 OPH

NEWBY, JAMES P. 905 N EMPORIA.67214
263-0296
34 M 1902 59 TS

NEWSOM, F CARTER. 3310 E DOUGLAS.67208
685-1443
18 M 1201 43 P

NIXON, WILLIAM A. 3333 E CENTRAL.67208
683-6622
16 M 1902 44 GS

NORRIS, ROBERT P. 3244 E DOUGLAS.67208
689-9232
17 M 1902 43 IM

NORTH, DORIS G. 1148 S HILLSIDE.67211
684-5257
16 F 1902 47 FP

NORTH, VICTOR. 1148 S HILLSIDE.67211
684-5257
18 M 1902 47 FP

NORTON, ROBERT K. 3244 E DOUGLAS.67208
689-9235
32 M 1001 57 PO

NOWLIN, NANCY S. 1001 N MINNEAPOLIS.67214
268-8378
F 1902 74 IM

NYBERG, FREDRIK F. 3333 E CENTRAL.67208
682-6511
22 M 2101 46 GYN

O DONNELL JR, LEONARD A. 8033 E DOUGLAS.67207
684-2835
27 M 1902 55 IM

O DONNELL SR, LEONARD A. 8033 E DOUGLAS.67207
684-2781
02 M 5606 26 IM

OCHSNER, BRUCE B. 1035 N EMPORIA STE 215.67214
263-6273
39 M 1902 65 OPH

OENHEIMER, BURTRAM J. 3244 E DOUGLAS.67208
689-9137
48 M 2105 73 N

DOULIO, PERLITA. ST JOSEPH MED CENTER.67207
685-1111
39 F 74807 63 PM

OSBORNE, CONRAD C. 855 N HILLSIDE.67214
685-1381
38 M 1902 67 FP

OSIO, ANTONIO L. 1520 S CLIFTON.67206
685-2371
41 M 26404 65 EM

OSOBA, WILLIAM G. 2525 W 13TH.67203
943-9391
25 M 2802 51 FP

OWEN, LARUE W. 303 S HILLSIDE.67211
684-7251
19 M 1902 50 ANES

OWEN, PERE A. 303 S HILLSIDE.67211
684-7251
37 M 1902 64 ANES

PAOGETT, WILLIAM L. 841 S HILLSIDE.67211
683-7503
24 M 1902 51 FP

PAGE, RUTH G. 1051 N STRATFORD.67206
684-0255
13 F 1902 43 OO

PALMER, DAVID L. P O BOX 2858.67201
686-7161
37 M 1902 63 PATH

PARKER, HAROLD L. 2932 BENJAMIN.67204
262-3765
32 M 1902 67 FP

PATTERSON, BRUCE W. 1520 SOUTH CLIFTON.67218
685-2371
46 M 1902 73 FM

PAY, NORMAN T. ST FRANCIS HOSP.67214
262-6311
45 M 74802 68 NR

PENCE, CHARLES O. 3244 EAST DOUGLAS.67208
689-9195
42 M 1902 68 ORS

PENNINGTON, KATHERINE. 2113 SO BLUFF CT.67218
685-5271
16 F 1902 43 PO

PETERIE, JERRY P. 1001 N MINNEAPOLIS.67214
268-8378
48 M 1902 75 IM

PETERS, DALE W. 3201 EAST SECOND.67208
682-9241
21 M 1902 45 P

PETTERSON, O'RUTH S. 5205 E 21ST.67208
682-6526
19 F 1902 44 OO

PHIPPS, JACK G. 315 N HILLSIDE.67214
686-3391
21 M 1902 53 FP

PINSKER, JACOB A. 1035 N EMPORIA.67214
267-8259
06 M 1902 35 IM

POLLING, TERRY L. 6155 E HARRY.67218
685-2306
36 M 1902 62 FP

POLLACK, SIMON. 7523 PLAZA LANE.67206
- M 36 OO

POLLANO OO, STEPHEN M. 959 N EMPORIA.67214
265-5291
39 M 2878 68 PM

POLLOCK, ANTHONY G A. 1035 N EMPORIA STE 140.67214
265-1631
45 M 8305 71 ORS

POOLE, BERNARD T. 1035 N EMPORIA.67214
264-2806
37 M 53902 62 ORS

PORTER, GARRY L. 3243 E MURDOCK STE 400.67208
686-7351
35 M 1606 61 P

POWERS, K DEAN. 2703 E CENTRAL.67214
685-1277
23 M 1902 47 OBG

PRIETO, LUIS E. 959 N EMPORIA SUITE 403.67214
265-2613
39 M 26407 65 IM

PRUITT, JOHN C. 427 N HILLSIDE.67214
686-6608
48 M 1902 74 OTO

PULLMAN, NORMAN K. 3007 E CENTRAL.67214
686-7369
21 M 3006 45 PS

PURINTON, LEW W. 1431 S BLUFFVIEW OR.67218
685-1301
23 M 1902 48 IM

PUTNAM, LYLE B. 1035 N EMPORIA.67214
262-5037
11 M 1902 36 FP

RAHBAR, AL A. 905 NORTH EMPORIA.67214
263-0296
43 M 2501 69 TS

RANDALL, GEORGE R. 5205 E 21ST.67208
684-2838
43 M 2802 69 OTO

RANOLIS, MICHAEL J. 959 N EMPORIA.67214
265-0789
48 M 1902 73 IM

RAUSA JR, FRANCISCO C. 1148 SOUTH HILLSIDE.67211
683-4658
42 M 74808 66 IM

RAWCLIFFE JR, ROBERT A. 925 N EMPORIA.67214
262-3476
29 M 3501 55 ORS

RAZEK, ZACK A. 905 NORTH EMPORIA.67214
263-0296
46 M 60501 70 COTS

REALS, WILLIAM J. ST JOSEPH MED CENTER.67218
686-9432
20 M 3006 45 PATH

REAZIN, WALTER L, 1430 HOMESTEAD,67208
 685-1381
 30 M 1902 58 FP
 REED, A J, 1520 S CLIFTON,67218
 685-2371
 40 M 3901 65 EM
 REED, D CRAMER, WESLEY MED CNTR/PROF DEV,67214
 688-2080
 15 M 2802 41 ADM
 REED, DAVIO D, 3333 E CENTRAL,67208
 685-1291
 43 M 1902 69 OR
 REEVES, BRADFORD F, 3333 E CENTRAL,67208
 685-1291
 37 M 4812 62 R
 RELIHAN, DONALD A, 3333 E CENTRAL,67208
 684-5158
 27 M 1902 54 OPH
 REMPEL, JOHN H, 3333 E CENTRAL,67208
 685-1812
 38 M 3901 62 PS
 RENNEBOHM, ROBERT M, 1001 NORTH MINNEAPOLIS,67214
 268-8302
 46 M 502 72 PO
 RHODAS, JAMES P, 420 NORTH MISSION,67206
 -
 34 M 3520 60 IM
 RHODEN, CURTIS K, 3243 E MURDOCK,67208
 684-0252
 33 M 1803 59 IM
 RHODES, IVAN E, 3333 E CENTRAL,67208
 685-1291
 25 M 3901 49 R
 RHODES, LOWELL M, 315 N HILLSIDE,67214
 685-1461
 25 M 1902 53 FP
 RICHARDSON, STEWART F, 3420 E DOUGLAS,67208
 685-2321
 28 M 3005 54 P
 RIEGER, ERNEST H, 3243 E MURDOCK,67208
 682-4591
 29 M 1902 56 GS
 RIORDAN, HUGH D, 434 N OLIVER,67208
 682-9241
 32 M 5605 57 P
 ROBERTS, DANIEL K, WESLEY MED CENTER,67214
 682-6511
 36 M 3005 61 D8G
 ROBERTS, LOUIS S, 115 S RUTAN,67218
 -
 95 M 2834 20 OO
 ROBERTSON, JOSEPH K, 905 N EMPORIA,67214
 263-0296
 41 M 3901 66 GS
 ROBINSON, G DONALD, 3333 E CENTRAL,67208
 686-6659
 28 M 1902 54 PD
 ROBINSON, JOHN E, 3243 E MURDOCK STE 400,67208
 686-7351
 32 M 6201 50 P
 ROBINSON, ROBERT H, 3244 E DOUGLAS,67208
 689-9445
 20 M 1902 53 ANES
 ROBINSON, WILLIAM A, 1520 S CLIFTON,67230
 685-2371
 49 M 2101 75 EM
 ROBL, DAVIO A, 1301 N WEST,67203
 262-3765
 48 M 1902 74 FP
 RODRIGUEZTOCKER, LILIA, 1111 N ST FRANCIS,67214
 265-2613
 21 F 27501 49 IM
 ROMALIS, BRIAN E, 3420 E DOUGLAS,67208
 682-5069
 39 M 6201 63 P
 ROSE, SHELBY D, 3333 E CENTRAL,67208
 681-2741
 40 M 2012 68 PATH
 ROSEN, DAVID, 1035 N EMPORIA STE 265,67207
 265-3226
 48 M 1902 74 PO
 ROSENBERG, THOMAS F, 611 N HILLSIDE,67214
 684-0501
 41 M 1642 68 A
 ROSS, DENNIS LEE, 1035 N EMPORIA 105,67211
 263-7285
 47 M 5003 73 NEP
 RUSSELL, PHILIP W, 3244 E DOUGLAS,67208
 689-9351
 22 M 1902 44 IM
 SABIN JR, GEORGE M, 334 N TOPEKA,67202
 265-6601
 12 M 5002 39 ADM
 SADIO, SULEMAN, 1111 N ST FRANCIS,67214
 265-2613
 40 M 70401 63 TS
 SAEED, MOHAMMAD A, 1520 S CLIFTON,67218
 685-2371
 42 M 70404 66 IM
 SALGAO, CARLOS R, 1111 N ST FRANCIS,67214
 265-2613
 33 M 13201 55 CO
 SANTOSCOY, GILBERT S, 3244 E DOUGLAS,67208
 689-9124
 38 M 4812 62 GS
 SCANLAN, TIMOTHY M, 1122 N TOPEKA,67208
 265-2876
 46 M 2604 71 FP
 SCHILTZ, FRANCES, 115 S RUTAN #108,67218
 -
 93 F 6701 23 OO
 SCHLACHTER, ERNEST R, 406 E CENTRAL,67202
 265-0705
 24 M 1902 52 FP
 SCHLICHER, JOHN E, 3244 E DOUGLAS,67208
 689-9346
 40 M 1803 66 O
 SCHLUETER, JOHN J, 3333 E CENTRAL,67208
 685-9289
 31 M 3841 56 R
 SCHNELLE, JOACHIM, 4145 EAST KELLOGG,67218
 682-0621
 44 M 40933 70 FP
 SCHOPF, CLIFTON C, FAMILY PRACTICE CLINIC,67214
 262-3765
 29 M 1902 57 FP
 SCHWARTZ, V DEAN, 400 N WOODLAWN,67208
 684-3881
 24 M 1902 48 FP
 SCOTT, VINCENT L, 72 MISSION RD,67207
 -
 03 M 3806 29 DO
 SCOTT, WILLIAM H, 1431 S BLUFFVIEW STE 111,67218
 685-1111
 41 M 4901 65 CD
 SHAFER, PRESTON J, 3333 E CENTRAL,67208
 682-6511
 20 M 3005 46 OBG
 SHAH, MUKHTAR H, 1543 S HILLSIDE,67211
 268-8262
 40 M 70404 63 P
 SHAW, JAMES W, 150 S BATTIN,67218
 -
 98 M 1601 27 OO
 SHAW, RICHARD C, 825 N EMPORIA,67214
 262-3495
 35 M 1902 61 PS
 SHELLITO, JOHN G, 3244 E DOUGLAS,67208
 689-9124
 18 M 1606 43 TS
 SHIFLET, ALBERT W, 841 N BROADWAY,67214
 -
 06 M 3901 33 OO
 SHRAOER, DOYLE A, 3333 E CENTRAL,67208
 682-4851
 16 M 1902 41 EENT
 SIEGEL, ALBERT R, 3600 E HARRY,67218
 685-1111
 22 M 1642 47 PM
 SIFFORD, R LAWRENCE, 959 N EMPORIA,67214
 265-0561
 25 M 1803 52 IM
 SKIBBA, RICHARD M, 3244 E DOUGLAS,67208
 689-9477
 43 M 5606 70 GE
 SLEEPER, DONALD C, PO 8DX 11344,67211
 265-1684
 32 M 1902 58 R
 SLUTSKY, LAWRENCE JOEL, ST FRANCIS HOSPITAL,67214
 268-5922
 46 M 3501 72 OR
 SMITH, ALVIN L, 929 N ST FRANCIS,67214
 262-6211
 28 M 5606 57 PATH
 SMITH, TIMOTHY WM, 959 N EMPORIA - SUITE 404,67214
 265-5291
 49 M 1902 74 IM
 SMITH JR, WILLARD J, 851 N HILLSIDE,67214
 685-1371
 32 M 1611 57 U
 SNYDER, GREGG M, 3243 E MURDOCK,67208
 685-2377
 27 M 1803 54 NS
 SOLOMON, HERMAN, 835 N HILLSIDE,67214
 685-4395
 37 M 2701 62 O

SOLTZ, ROBERT A. 3244 EAST ODOUGLAS, 67208
689-9381
47 M 2803 74 PO
SOMERS, MARVIN M, ST FRANCIS HOSP, 67214
262-6211
23 M 1902 48 R
SPANN, RICHARD W. 3243 E MURDOCK, 67208
684-0252
40 M 1902 65 PUO
ST-PHARD, GLDOYS, UKSM - WICHITA, 67214
268-8388
37 M 44401 63 P
STANLEY, KENNETH E, 959 N EMPORIA, 67214
267-0256
31 M 1902 56 U
STARK, JAMES R, 3244 E ODOUGLAS, 67208
689-9422
20 M 1902 44 R
STEIN, PAUL S. 3243 E MURDOCK, 67208
685-2377
40 M 3305 66 NS
STEWART, JACK T, 4815 E CENTRAL, 67208
683-8401
30 M 2802 57 IM
STOLZ, ELMER G, 425 E MURDOCK, 67214
265-6287
17 M 3006 45 FP
STOSKOPF, LAWRENCE E, 3333 E CENTRAL, 67208
685-4389
39 M 1902 72 ANES
STRANGE, MICHAEL, WESLEY MED CENTER, 67214
685-2151
M
STREET, DAVID E, 905 N EMPORIA, 67214
263-0296
35 M 2101 61 GS
STRICKLAND, MAURICE H VAN, 3244 E ODOUGLAS, 67208
689-9156
51 M 4804 74 A
STRYKER, TERRY MARGARET, 3243 E MURDOCK - STE 300, 67206
685-8231
47 F 1002 75 FP
SUERO, JESUS T, 1152 SOUTH CLIFTON, 67218
681-1671
33 M 74802 PUO
SULLIVAN, CORNELIUS J P, 1431 BLUFFVIEW DR, 67218
685-4851
18 M 3509 43 ORG
SULLIVAN, LEDNARD L, 3244 E ODOUGLAS, 67208
689-9454
35 M 1902 61 PO
SWANSON, HOWARD J, 1035 N EMPORIA, 67211
264-2371
47 M 1902 73 IM
SWEENEY, JAMES G, ST FRANCIS HOSP, 67214
268-5000
M
SWISHER, WILLIAM C, 5025 E KELLOGG, 67218
682-1534
21 M 1902 47 DBG
TATPATI, DANIEL A, 1111 NORTH ST FRANCIS, 67218
265-2613
44 M 49535 67 TS
TATPATI, OLGA ADELINA, U K S M - WICHITA, 67214
262-8271
44 F 49535 67 PO
TAYLOR, RICHARD J, 929 N ST FRANCIS, 67214
262-1952
21 M 3006 49 PATH
TAYLOR, STEVEN L, USAF HOSP, 67210
681-5866
46 M 1902 77 GP
THELEN, J CHRISTINE, 212 BITTING BLDG, 67202
267-3936
13 F 5104 37 ORG
THOMPSON, DANIEL M, PO BOX 4044, 67204
838-3381
19 M 1902 50 FP
TIMEN, EDWARD N, 3244 E ODOUGLAS, 67208
689-9481
24 M 1606 48 IM
TIMEN, HENRY N, 1227 N RIVER BLVD, 67203
-
96 M 1601 19 DD
TILLER, GEORGE R, S101 E KELLOGG, 67218
684-S255
41 M 1902 67 AM
TILTON, FRANK M, 3244 E ODOUGLAS, 67208
689-9137
33 M 2002 59 N
TINKER, ROBERT C, 1126 S CLIFTON, 67218
682-7578
31 M 2834 57 ORS

TINTEROW, MAURICE M, 3333 E CENTRAL, 67208
685-4389
17 M 4802 41 ANES
TIPPIN JR, ERNEST E, 959 N EMPORIA, 67214
265-S256
24 M 1902 50 OTO
TODCKER, ALFRED M, 1111 N ST FRANCIS, 67214
265-2613
15 M 4802 40 TS
TONN, GERHART R, 855 N HILLSIDE, 67214
685-1381
16 M 1902 44 FP
TOVAR, MANUEL H, 4805 W CENTRAL, 67203
265-2613
37 M 26401 67 GP
TRACY, TERRY A, 3333 E CENTRAL, 67208
686-7301
35 M 2803 61 OBG
TREES, DONALD P, 1403 S HYDRAULIC, 67211
-
14 M 4101 39 DD
TRETBAR, HARVEY A, 3243 E MURDOCK, 67208
684-0251
25 M 1902 52 IM
TREWEEKE, MICHAEL W, 2916 EAST CENTRAL, 67214
684-S234
46 M 1902 72 IM
UHLIG, PAUL J, 3244 E ODOUGLAS, 67208
689-9191
28 M 1902 57 PD
VAN DER VLIET, STEPHEN K, 3244 E ODOUGLAS, 67208
689-9316
42 M 1606 68 OPH
VINZANT, LARRY E, 1431 BLUFFVIEW, 67218
682-6532
10 M 1902 40 GS
VINZANT, WHITNEY L, 1431 SOUTH BLUFFVIEW #109, 67218
686-1991
45 M 1902 71 GS
VORHEES, VICTOR J, 3243 E MURDOCK, 67208
685-8231
36 M 1902 68 FP
VOTH, ODOUGLAS W, UKSM-WICHITA DEPT OF IM, 67214
268-8378
34 M 1902 59 IM
WADUD, ABDUL, 1543 S HILLSIDE, 67211
268-8251
35 M 70409 60 P
WAKIM, PAUL E, 1035 N EMPORIA, 67214
265-1631
45 M 2878 ORS
WALKER, WILLIAM L, 3333 EAST CENTRAL #214, 67208
685-2151
44 M 1902 70 R
WALSH, RICHARD A, UKSM-WICHITA, 67214
268-8224
25 M 3519 48 GS
WALTERS, ROBERT MERRILL, 3244 E ODOUGLAS, 67208
789-9495
41 M 2802 74 ORS
WARREN, LLOYD P, 5205 E 21ST, 67208
683-7223
11 M 1902 36 OPH
WARREN, WIRT A, 352 N BROADWAY, 67202
267-5031
09 M 2802 33 GER
WARREN JR, JOHN W, 3244 E ODOUGLAS, 67208
689-9239
15 M 2501 39 U
WEAVER, J ROBERT, 959 N EMPORIA, 67214
265-5731
21 M 1902 48 FP
WEAVER, JACK O, 959 N EMPORIA, 67214
265-7241
16 M 2802 42 OPH
WEBER JR, HUGO P, 1035 N EMPORIA, 67214
263-7285
40 M 702 66 IM
WEBSTER, ROBBY W, 345 N HILLSIDE, 67214
686-3384
48 M 4802 74 OBG
WEDIN, PAUL H, 1 PFACH TREE LANE, 67207
685-1111
08 M 1902 38 ADM
WEIPPERT, EDWARD J, 10300 W MAPLE, 67209
943-3271
44 M 1902 70 FP
WELCH, LAUREN K, 3243 E MURDOCK, 67208
685-2377
35 M 1902 61 N
WELCH, MARTIN H, 5500 EAST KELLOGG, 67218
685-2221
36 M 5605 61 IM

WELLSHEAR, CHARLES C. PO BOX 8037,67214
684-0201
30 M 4706 58 P
WENINGER, JOHN M. 1148 S HILLS10E,67211
682-6523
32 M 3005 62 FP
WEST, WILLIAM T. 3244 E DOUGLAS,67208
689-9234
24 M 1902 49 OBG
WHALLON, JACOB T. 202 N ROCK RD APT 120,67206
-
14 M 1720 41 00
WHEELER, PINCKNEY R. 2208 W 13TH,67203
943-2118
18 M 3901 56 FP
WHITAKER, JAMES A. 3243 E MURDOCK,67208
684-0251
44 M 1902 72 1M
WHITE, CHARLES M. 3244 E DOUGLAS,67208
689-9422
15 M 3005 41 R
WILDER, LOWELL W. 3333 E CENTRAL,67208
684-5158
35 M 4109 62 OPH
WILKINSON, LARRY K. 1520 S CLIFTON,67218
685-2371
46 M 1902 74 FP
WILLIAMS, CHARLES L. 3244 E DOUGLAS,67208
689-9268
16 M 2834 43 1M
WINCHELL, H H FORSYTH, P O BOX 11344,67211
265-1684
34 M 3545 58 R
WINCHESTER, EUGENE B. 1148 S HILLS10E,67211
684-0271
18 M 3006 56 FP
WISDOM, JAY K. 1148 S HILLS10E,67211
684-0271
12 M 1902 42 FP
WISNER JR, HARRY J. 3244 E DOUGLAS,67208
689-9169
17 M 3005 43 1M
WITTMANN, ALBERT F. 2323 N WOODLAWN,67220
-
10 M 2834 38 00
WOLFE, FREDERICK. 1035 N EMPORIA,67214
264-2371
36 M 3508 66 RHU
WOOD, GARY B. 1148 S HILLS10E,67211
684-2131
21 M 2802 45 1M
WOODARD, LAWRENCE E. 3244 E DOUGLAS,67208
689-9234
15 M 1606 41 OBG
WOODHOUSE, CHARLES L. 959 N EMPORIA,67214
265-8821
10 M 1902 34 ENT
WOOLLCOTT JR, PHILIP, UKSM WICHITA,67208
268-8388
28 M 4102 54 P
WRAY, ALEXANDER J. 120 E 21ST ST,67214
838-4912
19 M 1902 49 FP
YOUNG, DOUGLAS L. 3244 E DOUGLAS,67208
689-9213
42 M 1902 71 1M
YOUNGBERG, DEAN I. 2916 EAST CENTRAL,67214
684-5243
46 M 1902 72 1M
ZARNOW, HILARY. 730 N MAIN SUITE 6,67214
263-3219
45 M 1611 69 R
ZATZKIN, JAY B. 1035 N EMPORIA,67214
262-4467
46 M 2002 74 1M
ZIMMERMAN, KENNETH O. 3801 S OLIVER,67212
687-3925
29 M 3901 65 OM
ZONGKER, PHILIP E. 3244 E DOUGLAS,67208
689-9422
43 M 1902 70 R

WILSON—913
(Central Kansas Society)

OLABAL, FRANK A. ,67490
658-2400
07 M 1902 45 FP

WINCHESTER—913
(Jefferson County Society)

HUSTON, FRANCIS W. ,66097
774-2150
06 M 1601 34 FP
KEYS SR, ROBERT C. PO BOX 202,66097
-
97 M 1902 27 00

WINFIELD—316
(Cowley County Society)

CARRO, F AURELIO, SNYDER CLINIC,67156
221-3200
23 M 27501 49 1M
COLLINS, FRANK BUSH, SNYDER CLINIC ASSOCIATION,67156
221-3200
38 M 2701 63 T&CS
OAEHNKE, SIGURO S. SNYDER CLINIC,67156
221-3200
26 M 3005 60 FP
OEOPE, JOSEPH H. 1806 E 19TH,67156
221-4980
31 M 1902 57 FP
HOYLE, WINTHROP E. SNYDER CLINIC,67516
221-3200
22 M 702 47 OPH
HUTCHINSON, OIRK T. 1317 WHEAT RD,67156
221-3200
48 M 3901 74 1M
KAUFMAN, LELAND R. 221 WEST 8TH,67156
221-3350
33 M 1902 61 FP
KAUL, ANANO N. SNYDER CLINIC,67156
221-3200
39 M 49530 61 1M
LAWRY, JAMES VORIS, SNYDER CLINIC,67156
221-3200
40 M 502 77 GP
MAC KILLOP JR, DANIEL, 4 FLEETWOOD DR,67156
-
11 M 2407 38 00
MILLER, FRANKLIN R. BOX 544,67156
-
02 M 2401 27 1M
NEMMERS, DAVIO J. SNYDER CLINIC,67156
221-3200
34 M 1803 59 1M
PUTHENPURACKAL, GEORGE, 1211 EAST 5TH,67156
221-6100
42 M 65 1M
SAMUEL, CHANDY C. 1211 E 5TH,67156
221-6100
35 M 49527 59 GS
SNYDER, C JOHN, 1317 WHEAT RD,67156
221-3200
38 M 2401 64 GS
SNYDER, HOWARD E. 1317 WHEAT ROAD,67156
221-3200
03 M 4102 27 GS
WELLS, ALVIN Y. 1707 E 10TH,67156
-
97 M 1902 37 00
WELLS, BRUCE W. 221 W 8TH ST,67156
221-3350
39 M 1902 64 1M
WELLS, MAX W. PO BOX 643,67156
221-3350
12 M 1902 36 FP
WHITE, R BURNLEY, 117 W 9TH,67156
221-2950
24 M 1902 52 FP
*WILCOX, GENE M EXEC SEC, COWLEY CO MEDICAL SCC,67156
221-1670
M
WINBLAD, JAMES N. 1211 E 5TH ST,67156
221-6100
27 M 1902 53 GS

YATES CENTER—316
(Allen County Society)

ATKIN, JOHN O. 1004 E MADISON,66783
625-2312
35 M 3901 61 FP

OUT OF STATE

ALLAN, MICHAEL A. 85 COLONIAL LN
 DAYTON OH A5429
 ANNAMALAI, PERIAKAN R. VA HOSPITAL
 MILES CITY MT 59306
 BACON, ARTHUR H. 1A08 LAKE GENEVA OR
 LAKE WDRTH FL 33461
 BARNES, MARIAN. 1817 SE 21ST AVE
 FT LAUDERDALE FL 33316
 BASER, ALI N. USAF MED CENTER
 8ILDIXI MS 39534
 BEHLING, HELMUT H. OLD CAUSEWAY ROAD
 BEDFORD MA 01730
 BEHRHORST, CARROLL D. MEDIC Y CIRUJAND
 GUATEMALA
 BELL, JOHN D. UTMB-NEPHROLOGY DIVISION
 GALVESTON TX 77550
 BELL, MARGARET E. FRANKFURT YOUTH HLTH CTR
 APD NEW YDRK NY 09710
 BLACK, JAMES F. 230 A 8DWER PL
 HONOLULU HI 96818
 BLACK, WILLIAM L. USA MEDDAC NEUENBERG GERM
 APO NY NY 09696
 BRAUN, WILLIAM T. 163 BRANDY HILLS OR
 PORT DRANGE FL 32019
 BROWN, ALEX L. 2340 GRECIAN WAY #2
 CLEARWATER FL 33515
 BUCHNER, DAVID M. 6117 ROBIN #E
 INDIANAPOLIS IN 46254
 BUDETTI, JOSEPH A. 330 NEW YDRK AVE
 HOLLYWOOD FL 33020
 CABLE, THOMAS M. 26 HERITAGE RD
 VERSAILLES KY 40383
 CARBAUGH, KENNETH W. 71 HDPE DR
 BELLA VISTA AR 72712
 CARNEY, MYRTLE S. 4308 MELORING DR E
 FT WORTH TX 76109
 CHANGPONG, SALA. 217 W WELLS
 GENESCO IL 6125A
 CLARK, DRVILLE R. 911 EDEN ISLE DR NE
 ST PETERSBURG FL 33704
 CLARK, RAY A. 2410 2ND AVE
 LAKE CHAS LA 70601
 CLYDE, HARRIE R. 2034 E SOUTHERN AVE
 TEMPE AZ 85282
 CRDUCH, CAPT STEVEN W. USAF HOSPITAL ODVER
 ODVER OE 19901
 DIVER, ROBERT W. SAXONY APTS
 8ILOXI MS 39530
 EVANS, KENNETH L. PD BDX 776
 SHATTUCK DK 73858
 FEIGHNY, ROBERT E. 8335 DAWNWOOD
 SAN ANTONIO TX 78240
 FIELDMAN, E JAY. 7863 TOPAZ LAKE
 SAN DIEGO CA 92119
 FINK, ABRAHAM A. 305 JACARANDA DR
 PLANTATION FL 33324
 *GAINES, LARRY STRAWDER, 164 WOODLAND SHORES RD
 CHARLESTON SC 29412
 GENCH, RAYMOND L. 25870 ELINDR PLACE
 CARMEL CA 93923
 GILL, GEDRGE L. PD 80X 255
 LAMPE MD 65681
 GODDIN, ETHELYNN A. 516 IOLEWOOD DR
 ALEXANDRIA LA 71301
 GODDIN, WALKER D. 516 IDLEWOOD DR
 ALEXANDRIA LA 71301
 GRADINGER, BILLENS C. *
 * AR 67056
 GRAYSDN, RDY D. 6303 1ND SCHDOL NE #602
 ALBUQUERQUE NM 87110
 GRIGSBY, KENNETH R. 10161 HUTTON OR
 SUN CITY AZ 85351
 GUMUCIO, MARID L. *
 BDLIVA *
 HAMM, DRVAL L. MEMORIAL CHRISTN HDSP
 SIALKDT INDIA
 HAMMEL, GEDRGE W. 51 NANTUCKET OR
 BELLA VISTA AR 72712
 HARTLEY, FDUNT K. 2230 LILIA ST
 HONOLULU HI 96817
 HARVEY, THOMAS S. 540 MAIN
 WESTON MO 64098
 HAYES, JAMES PATRICK, 1005 ND 8 ST
 LYNCH NE 68746
 HOLCDMB, DDNALD G. 1526 EDGEOMONT
 LOS ANGELES CA 90027
 HYDE, MARSHALL E. 804 N 40TH
 FT SMITH AR 72901
 JACKMAN, GLENN H. PD 80X 997
 ESTES PARK CO 80517
 KASSEL, HENRY W. 2920 SIMMS
 LAKEWOOD CO 80215
 KAUFFMAN, RALPH E. WAYNE ST U SCHOOL OF MED
 DETROIT MI 48201
 LEGER, LEE H. RURAL ROUTE 1
 8DKELIA FL 33922
 LONGWDD, DRLIN W. 1800 N 49ER DRIVE
 TUCSON AZ 85715
 LDW, JOSEPH H. 10320 HUTTON OR
 SUN CITY AZ 85351
 LDWE, DEWITT S. WESTMINISTER GARDENS
 QUARTE CA 91010
 MCELROY, WILBUR J. THE ALERT HDSP
 ADDIS ABABA ET
 MILLER, HERBERT C. PD 80X 176
 NORFORD CT 06472
 MILLER, MONTE 8. 6075 RIVERSIDE AVE
 RIALTO CA 92376
 NASH, NEWMAN CURTIS, 6253 E PINCHOT AVE
 SCOTTSDALE AZ 85251
 NEIS, HARRY 8. RR #1 BDX 199A
 OSAGE BEACH MO 65065
 NEWTON, CHARLES R. 14080 SE LUCILLE
 PORTLAND OR 97236
 NIENSTEDT, JOHN F. 10502 LOMA BLANCA
 SUN CITY AZ 85351
 PDWERS, HAROLD W. 10633 WELK DRIVE
 SUN CITY AZ 85351
 RAHMAN, HAFIZ M. A. G PIERCE WDD MEM HDSP
 ARCADIA FL 33821
 REED, JAMES S. U S EMBASSY URUGUAY
 APO MIAMI FL 34035
 RDSE, DDNALD L. 16 EATON CIRCLE
 BELLA VISTA AR 72712
 ROSSITTO, ANTHONY F. 1490 JEFFERSON ST #103
 SAN FRANCISCO CA 94123
 SCALES, WILLIAM M. TWIN ISLAND ESTATES
 BLUE EYE MD 65611
 SCANLON JR, JAMES H. DAK RIDGE DR
 HADDAM CT 06438
 SCHAFFER, CLARENCE K. 139 SCENIC STREET
 SANTA CRUZ CA 95060
 SCHLOERB, PAUL R. U OF ROCHESTER MED CENTER
 ROCHESTER NY 14642
 SERRANO, JDAQUIN, 80X 189
 ARCADIA FL 33821
 SHEPHERD, GLEN R. 412 MENOOZA TERR
 CORONA DEL MAR CA 92625
 SNYDER, THOMAS E. 2293 E ABERDEEN DR
 MONTGOMERY AL 36116
 STEEGMANN, A THEODORE, 1720-A PEMBERTON LANE
 INDIANAPOLIS IN 46260
 STOFER, BERT E. PD 80X 1145
 SUN CITY AZ 85372
 TUCKER, SHERIDAN G. 22 GLEN HAVEN
 DE RIDDER LA 70634
 TYLER, WILLIAM F. 532 LN LOUMAN
 FORT SILL OK 73503
 WALLACE, ROBERT W. 80X 2182
 SEDONA AR 86336
 WALTON, PHILIP O. 606 N COLLEGE
 ALBANY MD 64402
 WESBROOK, CLYDE W. PSC BDX 732
 N Y NY 09289
 WESCOE, W CLARKE, 90 PARK AVE
 NEW YDRK NY 10016
 WILCHINS, LAWRENCE J. 3015 S TORREY PINES
 LAS VEGAS NV 89102
 YOUNG, RDGER L. 8P 169 MAMA YEMO HDSP
 AFRICA



Tagamet®

brand of

cimetidine

How Supplied:

Pale green 300 mg. tablets
in bottles of 100 and Single Unit Packages of 100
(intended for institutional use only).

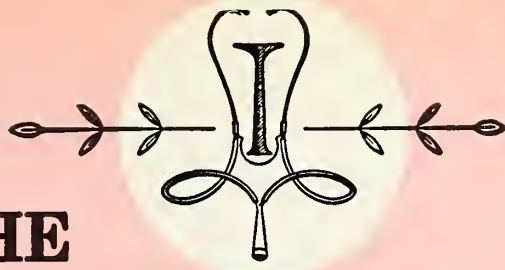
Injection, 300 mg./2 ml.,
in single-dose vials
and in 8 ml. multiple-dose vials,
both in packages of 10.

SK&F LAB CO.
a SmithKline company

**When painful spasm
is the presenting
symptom...**

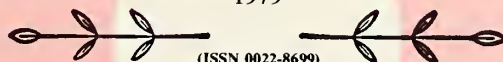


UKSM—Wichita



THE
Journal
OF THE
Kansas
Medical
Society

SEPTEMBER
1979



(ISSN 0022-8699)

VOL. LXX
NO. IX

LIBRARY,
U.C. SAN FRANCISCO

SEP 27 1979

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for September

Sixth Annual University of Kansas School of Medicine-Wichita Issue

The Dean's Letter — 1979 — Richard A. Walsh, M.D.	470
Departmental Reports	471
The Medical School: Present and Future — Richard A. Walsh, M.D., Dean, UKSM-Wichita	475
Update: Preference for Rural Practice Among Graduating Medical Students in Kansas — G. E. Lessard, Ph.D., Wichita	478
Community Maintenance: A Program for Chronic Mental Patients — George Dyck, M.D., Wichita	481

Scientific Articles

Reduction Mammoplasty: Autologous Blood and Two-Team Ap- proach — Gerald D. Nelson, M.D.; Tommy E. Kendall, M.D.; Richard C. Shaw, M.D.; and Bruce G. Ferris, M.D., Wichita	485
Bowel Preparations: A Comparative Study — George J. Farha, M.D., and Frederic C. Chang, M.D., Wichita	490
Sanfilippo Syndrome: A Case Report of Mucopolysaccharidosis III A — Sechin Cho, M.D., and Katherine Pennington, M.D., Wichita; and George H. Thomas, Ph.D., Baltimore, Maryland	494
Patent Ductus Arteriosus: Surgical Ligation in Premature Infants With Respiratory Distress Syndrome — Allen Gerber, M.D.; Sergio Bustamante, M.D.; and Medo Mirza, M.D., Wichita	499
Hydrops Fetalis: A Review of Seven Cases — Vichien Lorch, M.D.; Russell A. Nelson, M.D.; Agnes Meyers, M.D.; Diana Car- roll, R.N.; and Evelyn Mierau, R.N., Wichita	503

Current Comment

Infective Endocarditis — Recognizing Its Present Appearance and Avoiding Errors in Management — Daniel R. Hinthorn, M.D., Kansas City, Kansas	504
---	-----

Socio-Economics

Telephone Answering Solutions	509
Corporate Disability	511

Miscellaneous

Advertisers	528
Auxiliary News	465
Book Reviews	515
Classified Advertisements	528
Editorial Comment: <i>Addendum</i>	513
Impaired Physician Program Resource List	518
Information for Authors	498
Obituaries	516
Personalities	521
President's Message	512

Copyright 1979, by the Kansas Medical Society. Indexed in "Hospital Literature Index," "Index Medicus." Available through University Microfilms. Listed in "CC/Clinical Practice."

Address all correspondence to the
JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2381. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 1300 Medical Arts Bldg., Topeka 66604

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Risin, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A. Editorial Assistant: Eleanor Beal, 1300 Topeka Avenue, Topeka 66611

Business Manager: Jeremy Slaught, 1300 Topeka Avenue, Topeka 66611

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisement, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; postage \$10.00. Printed by The Ovid Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

TAKE TIME TO EXPLORE THE OPTIONS

DID YOU KNOW:

1. That by Incorporating your practice you could substantially save tax dollars.
2. You may not be receiving full benefit from Pension and Profit Sharing/Tax Shelters.
3. That by having Keogh Plan with higher contribution limits, you can benefit.
4. You may not be receiving Maximum Tax Savings from Fringe Benefits.
5. That you can plan more effective ways of reducing your Estate Asset Tax Liability.

CLIP & RETURN

CLIP & RETURN

John:

Yes, I'm concerned about my tax position in 1980 and I'd like more information on:

- ☐ Incorporating my practice
- ☐ Pension and Profit Sharing/Tax Shelters
- ☐ Keogh Plans — with higher contribution limits
- ☐ Fringe Benefit Tax Planning
- ☐ Estate Asset Tax Liability

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

IMPORTANT QUESTIONS — SENSIBLE ANSWERS



JOHN E. LYONS
MIDWEST PENSION PLANNERS
Suite 1010 Merchants National Bank
Topeka, Kansas 66612 913-235-5305



The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for September

Sixth Annual University of Kansas School of Medicine-Wichita Issue	
The Dean's Letter — 1979 — Richard A. Walsh, M.D.	470
Departmental Reports	471
The Medical School: Present and Future — Richard A. Walsh, M.D., Dean, UKSM-Wichita	475
Update: Preference for Rural Practice Among Graduating Medical Students in Kansas — G. E. Lessard, Ph.D., Wichita	478
Community Maintenance: A Program for Chronic Mental Patients — George Dyck, M.D., Wichita	481
Scientific Articles	
Reduction Mammoplasty: Autologous Blood and Two-Team Approach — Gerald D. Nelson, M.D.; Tommy E. Kendall, M.D.; Richard C. Shaw, M.D.; and Bruce G. Ferris, M.D., Wichita	485
Bowel Preparations: A Comparative Study — George J. Farha, M.D., and Frederic C. Chang, M.D., Wichita	490
Sanfilippo Syndrome: A Case Report of Mucopolysaccharidosis III A — Sechin Cho, M.D., and Katherine Pennington, M.D., Wichita; and George H. Thomas, Ph.D., Baltimore, Maryland	494
Patent Ductus Arteriosus: Surgical Ligation in Premature Infants With Respiratory Distress Syndrome — Allen Gerber, M.D.; Sergio Bustamante, M.D.; and Medo Mirza, M.D., Wichita	499
Hydrops Fetalis: A Review of Seven Cases — Vichien Lorch, M.D.; Russell A. Nelson, M.D.; Agnes Meyers, M.D.; Diana Carroll, R.N.; and Evelyn Mierau, R.N., Wichita	503
Current Comment	
Infective Endocarditis — Recognizing Its Present Appearance and Avoiding Errors in Management — Daniel R. Hinthorn, M.D., Kansas City, Kansas	504
Socio-Economics	
Telephone Answering Solutions	509
Corporate Disability	511
Miscellaneous	
Advertisers	528
Auxiliary News	465
Book Reviews	515
Classified Advertisements	528
Editorial Comment: <i>Addendum</i>	513
Impaired Physician Program Resource List	518
Information for Authors	498
Obituaries	516
Personalities	521
President's Message	512

Copyright 1979, by the Kansas Medical Society. Indexed in "Hospital Literature Index," "Index Medicus." Available through University Microfilms. Listed in "CC/Clinical Practice."

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 105 Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; **Editorial Assistant:** Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

TAKE TIME TO EXPLORE THE OPTIONS

DID YOU KNOW:

1. That by Incorporating your practice you could substantially save tax dollars.
2. You may not be receiving full benefit from Pension and Profit Sharing/Tax Shelters.
3. That by having Keogh Plan with higher contribution limits, you can benefit.
4. You may not be receiving Maximum Tax Savings from Fringe Benefits.
5. That you can plan more effective ways of reducing your Estate Asset Tax Liability.

CLIP & RETURN

CLIP & RETURN

John:

Yes, I'm concerned about my tax position in 1980 and I'd like more information on:

- ☐ Incorporating my practice
- ☐ Pension and Profit Sharing/Tax Shelters
- ☐ Keogh Plans — with higher contribution limits
- ☐ Fringe Benefit Tax Planning
- ☐ Estate Asset Tax Liability

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

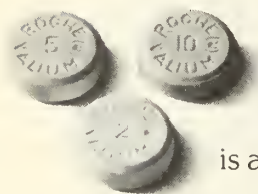
IMPORTANT QUESTIONS — SENSIBLE ANSWERS



JOHN E. LYONS
MIDWEST PENSION PLANNERS
 Suite 1010 Merchants National Bank
 Topeka, Kansas 66612 913-235-5305



A character all its own.



Valium (diazepam/Roche) is a benzodiazepine with a character all its own.

Pharmacologically, it is a potent skeletal muscle relaxant and anticonvulsant (in adjunctive use), as well as an antianxiety agent. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

But the individual character of Valium is even more apparent clinically than pharmacokinetically. And far more significant. That's because of the patient response obtained with Valium. A response which brings a calmer frame of mind. A response which has a pronounced effect on the somatic symptoms of anxiety, particularly muscular tension. A response which helps the patient feel more like himself again because of the way Valium reduces the overwhelming symptoms of anxiety and psychic tension.

Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving; operating dangerous machinery or the simultaneous ingestion of alcohol.

Unquestionably, many psychotherapeutic agents, including other benzodiazepines, have antianxiety effects. But one fact remains: you get a certain kind of patient response with Valium. It's a response you want. A response you know. A response you trust as part of your overall management of anxiety and psychic tension.

Valium[®] ^{IV}
diazepam/Roche
2-mg, 5-mg, 10-mg scored tablets
**a prudent choice in psychic
tension and anxiety**

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium[®] (diazepam) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose[®] packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available singly and in trays of 10.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

**IN KANSAS
YOUR INDEPENDENT AUTHORIZED DEALERS ARE:**

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Emporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Paul Donigan
Belton Hearing Aid Service
929 Kansas Ave.
Topeka, Kansas 66612
(913) 234-3301

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street • Chicago, Illinois 60646

An American Company

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

TEST	RESULT	UNIT
HEMOGLOBIN	15.1	g/dl
HEMATOCRIT	45.2	%
PACKED CELL VOLUME	30.6	%
MEAN CORPUSCULAR VOLUME	20.3	fL
RED BLOOD CELL COUNT	4.5	mill/mc
WHITE BLOOD CELL COUNT	12.5	mill/mc
DIFFERENTIAL WHITE BLOOD CELL COUNT		%
PLATELET COUNT	250,000	mill/mc
URIC ACID	5.2	mg/dl
BUN	12.0	mg/dl
CREATININE	1.2	mg/dl
GLUCOSE	100	mg/dl
ALBUMIN	4.5	g/dl
TOTAL BILIRUBIN	1.2	mg/dl
ASPARTATE AMINOTRANSFERASE	25	U/L
ALANINE AMINOTRANSFERASE	15	U/L
LACTATE DEHYDROGENASE	150	U/L
AMYLASE	100	U/L
LIPID PROFILE		
CHOLESTEROL	200	mg/dl
TRIGLYCERIDES	150	mg/dl
HDL CHOLESTEROL	50	mg/dl
LDL CHOLESTEROL	130	mg/dl
VITAMIN D	30	ng/ml
IRON	150	mcg/dl
TOTAL IRON BINDING CAPACITY	300	mcg/dl
TRANSFERRIN SATURATION	50	%
PROTHROMBIN TIME	12.5	sec
PT/APTT	12.5/35	sec
URINARY GLUCOSE	NEGATIVE	
URINARY BILIRUBIN	NEGATIVE	
URINARY HEMOGLOBIN	NEGATIVE	
URINARY KETONES	NEGATIVE	
URINARY NITROGEN	NEGATIVE	
URINARY PHOSPHORUS	NEGATIVE	
URINARY SODIUM	NEGATIVE	
URINARY POTASSIUM	NEGATIVE	
URINARY CALCIUM	NEGATIVE	
URINARY MAGNESIUM	NEGATIVE	
URINARY ZINC	NEGATIVE	
URINARY COPPER	NEGATIVE	
URINARY MANGANESE	NEGATIVE	
URINARY NICKEL	NEGATIVE	
URINARY SILICON	NEGATIVE	
URINARY BROMINE	NEGATIVE	
URINARY FLUORINE	NEGATIVE	
URINARY IODINE	NEGATIVE	
URINARY LITHIUM	NEGATIVE	
URINARY STRONTIUM	NEGATIVE	
URINARY TUNGSTEN	NEGATIVE	
URINARY VANADIUM	NEGATIVE	
URINARY MANGANESE	NEGATIVE	
URINARY COBALT	NEGATIVE	
URINARY NICKEL	NEGATIVE	
URINARY CUPRUM	NEGATIVE	
URINARY ZINC	NEGATIVE	
URINARY CADMIUM	NEGATIVE	
URINARY MERCURY	NEGATIVE	
URINARY LEAD	NEGATIVE	
URINARY ARSENIC	NEGATIVE	
URINARY SILICON	NEGATIVE	
URINARY BROMINE	NEGATIVE	
URINARY FLUORINE	NEGATIVE	
URINARY IODINE	NEGATIVE	
URINARY LITHIUM	NEGATIVE	
URINARY STRONTIUM	NEGATIVE	
URINARY TUNGSTEN	NEGATIVE	
URINARY VANADIUM	NEGATIVE	
URINARY MANGANESE	NEGATIVE	
URINARY COBALT	NEGATIVE	
URINARY NICKEL	NEGATIVE	
URINARY CUPRUM	NEGATIVE	
URINARY ZINC	NEGATIVE	
URINARY CADMIUM	NEGATIVE	
URINARY MERCURY	NEGATIVE	
URINARY LEAD	NEGATIVE	
URINARY ARSENIC	NEGATIVE	

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

**THE LATTIMORE-FINK
LABORATORIES, INC.**
A DAMON LABORATORY

115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621

A retirement plan made to order for you, doctor!

By a commercial bank that knows medical banking from the start. Central Bank & Trust is a "professional" bank.

Your KEOGH (HR 10) plan, as well as other trust business, will get the service you expect.



**CENTRAL
BANK
& TRUST**

Main Bank/3433 E. Central • Wichita, Kansas 67208
Central Two/First and Hillside • Central Northwest/21st and Amidon
All Locations (316) 686-7111
MEMBER FDIC



Tagamet[®]

brand of

cimetidine

How Supplied:

Pale green 300 mg. tablets
in bottles of 100 and Single Unit Packages of 100
(intended for institutional use only).

Injection, 300 mg./2 ml.,
in single-dose vials
and in 8 ml. multiple-dose vials,
both in packages of 10.

SK&F LAB CO.
a SmithKline company

**When painful spasm
is the presenting
symptom...**



...in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

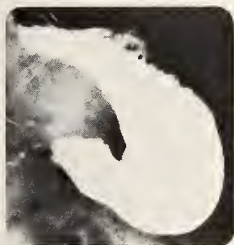
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

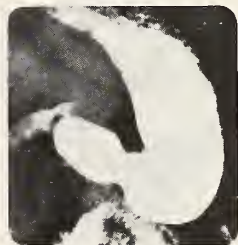
Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis, toxic megacolon complicating ulcerative colitis; myasthenia gravis. **WARNINGS:** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS:** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS:** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention; blurred vision and tachycardia, palpitations, mydriasis, cycloplegia, increased ocular tension; loss of taste, headache, nervousness, drowsiness, weakness, dizziness, insomnia; nausea, vomiting, impotence, suppression of lactation, constipation, bloated feeling, severe allergic reaction or drug idiosyncrasies including anaphylaxis, urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons, and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSE AND ADMINISTRATION:** Dosage must be adjusted to individual patient's needs.

Usual Dosage: Bentyl 10 mg capsule and syrup: *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg: *Adults:* 1 tablet three or four times daily. Bentyl Injection: *Adults:* 2 ml (20 mg) every four to six hours intramuscularly only. **NOT FOR INTRAVENOUS USE. MANAGEMENT OF OVERDOSE:** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanechol chloride USP) should be used.

Product Information as of October, 1978.

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Decatur, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.

Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

ALDORIL[®]

containing methyl dopa and hydrochlorothiazide

TABLETS

ALDORIL[®]-25

containing 250 mg ALDOMET[®] (Methyldopa, MSD) and 25 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL[®]-15

containing 250 mg ALDOMET[®] (Methyldopa, MSD) and 15 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL[®] D30

containing 500 mg ALDOMET[®] (Methyldopa, MSD) and 30 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL[®] D50

containing 500 mg ALDOMET[®] (Methyldopa, MSD) and 50 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

Merck Sharp & Dohme, Division of
Merck & Co., Inc., West Point, PA 19486

Copyright © 1979 by Merck & Co., Inc.

MSD
MERCK
SHARP
DOHME
J9A13



***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S
SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; **everything in order — accurately!**

*"Let
MAC
do it"*



Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215
2300 East Lincoln, Wichita, Kansas 67211

• (913)492-8805
• (316)261-5586

★
Specialized Service

IN
PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction™

Since 1899

THE
MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222



A reminder

ZYLOPRIM[®]

(allopurinol)

100 and 300 mg scored Tablets

- inhibits uric acid formation
- helps prevent urate crystal depositions in synovia
- reduces risk of uric acid lithiasis

INDICATIONS AND USE: This is not an innocuous drug and strict attention should be given to the indications for its use. Pending further investigation, its use in other hyperuricemic states is not indicated at this time.

Zyloprim[®] (allopurinol) is intended for:

1. treatment of gout, either primary, or secondary to the hyperuricemia associated with blood dyscrasias and their therapy;
2. treatment of primary or secondary uric acid nephropathy, with or without accompanying symptoms of gout;
3. treatment of patients with recurrent uric acid stone formation;
4. prophylactic treatment to prevent tissue urate deposition, renal calculi, or uric acid nephropathy in patients with leukemias, lymphomas and malignancies who are receiving cancer chemotherapy with its resultant elevating effect on serum uric acid levels.

CONTRAINDICATIONS: Use in children with the exception of those with hyperuricemia secondary to malignancy. The drug should not be employed in nursing mothers.

Patients who have developed a severe reaction to Zyloprim should not be restarted on the drug.

WARNINGS: ZYLOPRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION. In some instances a skin rash may be followed by more severe hypersensitivity reactions such as exfoliative, urticarial and purpuric lesions as well as Stevens-Johnson syndrome (erythema multiforme) and very rarely a generalized vasculitis which may lead to irreversible hepatotoxicity and death.

A few cases of reversible clinical hepatotoxicity have been noted and in some patients asymptomatic rises in serum alkaline phosphatase or serum transaminase have been observed. Accordingly, periodic liver function tests should be performed during the early stages of therapy, particularly in patients with pre-existing liver disease.

Patients should be alerted to the need for due precautions when engaging in activities where alertness is mandatory.

Nevertheless, iron salts should not be given simultaneously with Zyloprim. This drug should not be administered to immediate relatives of patients with idiopathic hemochromatosis.

In patients receiving Purinethol[®] (mercaptopurine) or Imuran[®] (azathioprine), the concomitant administration of 300-600 mg of Zyloprim per day will require a reduction in dose to approximately one-third to one-fourth of the usual dose of mercaptopurine or azathioprine. Subsequent adjustment of doses of Purinethol or Imuran should be made on the basis of therapeutic response and any toxic effects.

Usage in Pregnancy and Women of Childbearing Age. Zyloprim[®] (allopurinol) should be used in pregnant women or women of childbearing age only if the potential benefits to the patient are weighed against the possible risk to the fetus.

PRECAUTIONS: Some investigators have reported an increase in acute attacks of gout during the early stages of allopurinol administration, even when normal or sub-normal serum uric acid levels have been attained.

It has been reported that allopurinol prolongs the half-life of the anticoagulant, dicumarol. This interaction should be kept in mind when allopurinol is given to patients already on anticoagulant therapy, and the coagulation time should be reassessed.

A fluid intake sufficient to yield a daily urinary output of at least 2 liters and the maintenance of a neutral or, preferably, slightly alkaline urine are desirable to (1) avoid the theoretic possibility of formation of xanthine calculi under the influence of Zyloprim therapy and (2) help prevent renal precipitation of urates in patients receiving concomitant uricosuric agents.

Patients with impaired renal function require less drug and should be carefully observed during the early stages of Zyloprim administration and the drug withdrawn if increased abnormalities in renal function appear.

In patients with severely impaired renal function, or decreased urate clearance, the half-life of oxipurinol in the plasma is greatly prolonged. Therefore, a dose of 100 mg per day or 300 mg twice a week, or perhaps less, may be sufficient to maintain adequate xanthine oxidase inhibition to reduce serum urate levels. Such patients should be treated with the lowest effective dose, in order to minimize side effects.

Mild reticulocytosis has appeared in some patients.

As with all new agents, periodic determination of liver and kidney function and complete blood counts should be performed especially during the first few months of therapy.

ADVERSE REACTIONS:

Dermatologic: Because in some instances skin rash has been followed by severe hypersensitivity reactions, it is recommended that therapy be discontinued at the first sign of rash or other adverse reaction (see WARNINGS). Skin rash, usually maculopapular, is the adverse reaction most commonly reported.

Exfoliative, urticarial and purpuric lesions, Stevens-Johnson syndrome (erythema multiforme) and toxic epidermal necrolysis have also been reported.

A few cases of alopecia with and without accompanying dermatitis have been reported.

In some patients with a rash, restarting Zyloprim (allopurinol) therapy at lower doses has been accomplished without untoward incident.

Gastrointestinal: Nausea, vomiting, diarrhea, and intermittent abdominal pain have been reported.

Vascular: There have been rare instances of a generalized hypersensitivity vasculitis or necrotizing angitis which have led to irreversible hepatotoxicity and death.

Hematopoietic: Agranulocytosis, anemia, aplastic anemia, bone marrow depression, leukopenia, pancytopenia and thrombocytopenia have been reported in patients, most of whom received concomitant drugs with potential for causing these reactions. Zyloprim[®] (allopurinol) has been neither implicated nor excluded as a cause of these reactions.

Neurologic: There have been a few reports of peripheral neuritis occurring while patients were taking Zyloprim. Drowsiness has also been reported in a few patients.

Ophthalmic: There have been a few reports of cataracts found in patients receiving Zyloprim. It is not known if the cataracts predated the Zyloprim therapy. "Toxic" cataracts were reported in one patient who also received an anti-inflammatory agent; again, the time of onset is unknown. In a group of patients followed by Gutman and Yü for up to five years on Zyloprim therapy, no evidence of ophthalmologic effect attributable to Zyloprim was reported.

Drug Idiosyncrasy: Symptoms suggestive of drug idiosyncrasy have been reported in a few patients. This was characterized by fever, chills, leukopenia or leukocytosis, eosinophilia, arthralgias, skin rash, pruritus, nausea and vomiting.

OVERDOSAGE: Massive overdosing, or acute poisoning, by Zyloprim has not been reported.

HOW SUPPLIED: 100 mg (white) scored tablets, bottles of 100 and 1000; 300 mg (peach) scored tablets, bottles of 30, 100 and 500. Unit dose packs for each strength also available.

Complete information available from your local B. W. Co. Representative or from Professional Services Department PML.

U.S. Patent No. 3,624,205 (Use Patent)



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709



Auxiliary News

Forty auxiliary members from across the state attended our summer board of directors meeting and seminar in Minneapolis on July 12-13. A new "first" in registration was the attendance of 14 county Auxiliary presidents who presented reports and shared their plans for their respective auxiliaries for the ensuing year. Out of the business meeting came several items of special interest to all of us.

Upon recommendation from the Executive Board, approval was given for the mailing of an issue of *Communique* to every doctor's spouse in Kansas. This action is regarded as an important tool in informing the spouses of the many positive things that the Auxiliary is doing and thereby aiding in the attraction of new members. Another recommendation was that a leadership conference be combined with a seminar on the medical family. Lastly, the board decided to sponsor an auction for AMAERF to be held jointly with our spouses at the next annual convention, Friday evening, May 2, 1980. Mrs. Frank Bichlmeier, whom you will remember as one of the "gold dust twins," is general chairman.

Following the board meeting, a seminar on child abuse, juvenile pregnancy, and quality of family living was held. Leading the segment on child abuse was Wanda Macy, who recently has been successful in establishing a coalition for the prevention of child abuse in Salina. Mrs. Marjory Mecklenburg, a physician's wife from Minneapolis, Minnesota, gave a very informative program on how the quality of family life affects the children of our society today and how it relates to the high incidence of child abuse and juvenile pregnancy. The meeting closed Friday with a luncheon and an address by your Executive Secretary, Jerry Slaughter. Everyone went home inspired to become more directly involved in the politics of medicine at every level of government.

Eight Auxilians from Kansas attended the AMA Auxiliary convention in Chicago the following

week. The keynote address opening the house of delegates was given by Richard M. Scammon, Director of Elections Research Center in Washington, D.C. One of the highlights of the convention was a presentation by Edwin Newman, NBC TV and Radio News Commentator. His subject, "Preserving a Civil Tongue," was both humorous and thought provoking. Open hearings were held to explain to the delegates the proposed amendments to the bylaws and also the reasons for the necessity of a dues raise. Much discussion was held and many questions raised; they were very effectively answered by the national treasurer. Following this, the House of Delegates voted to increase annual dues from \$7 to \$11, effective in July 1980, and \$11 to \$15 effective July 1, 1982. Through this positive action, the national organization hopes to be able to reactivate some of the services they have been forced to discontinue because of inflation.

Tom Nesbit, M.D., president of the AMA, spoke to the Auxiliary on the structure of the health committees in Congress. Hubert A. Ritter, M.D., President of AMAERF, applauded the work of the Auxiliary in its fund-raising efforts. He reported that the auxiliaries' total giving this past year was \$1,015,111.96 and the physicians' total giving was \$647,078.90, for a grand total of \$1,662,190.86.

The 1979 national convention became history upon the installation of the new president, Mrs. Ben Johnson, Jr., of Bessemer, Alabama. This was followed by a lovely reception sponsored by the Auxiliary to the Medical Association of the State of Alabama. A new year presents us all with the challenge to begin at home with the programs and plans set forth by our national leaders.

Sincerely,

Kathy Wedel

President

Kansas Medical Society Auxiliary

What They're Saying...

Human nature presents a profound problem for preventive medicine. We cause most of our own basic health problems by eating too much, smoking too much and drinking too much. We drive cars unsafely, ignore seatbelts, refuse to exercise. Change those lifestyles, preventive-medicine proponents say, and there will be far fewer health problems. All of which is true. But if advocates of preventive medicine actually believe that a socialized system would compel us to stop smoking simply because we could more easily afford to trot into our doctor's office and be told to do so, their view of human nature is hopelessly muddled. Moreover, to characterize preventive techniques as "money-saving" is surely to miss an important point — we all die anyhow, and few of us die healthy. Save us from one thing and we will eventually suffer from and die of another. And a great deal of money may be spent on us in the process.

WILLIAM E. SIMON, *Commitment*, published by Abbott Laboratories, (Spring, 1979)

Are You Getting Your Journal Regularly?

If Not...

Have You Notified the Society's Executive Office of Your New Address?

Send all changes of address to:

**THE KANSAS MEDICAL SOCIETY
1300 Topeka Avenue
Topeka, Kansas 66612**

Brief Summary of Prescribing Information

Indications and Usage: Symptomatic relief of anxiety, tension, agitation, irritability insomnia associated with anxiety neuroses and transient situational disturbances; associated with depressive symptoms and as a treatment of symptoms of anxiety if such symptoms are a significant feature of functional or organic disorders, particularly gastrointestinal and cardiovascular.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all acting drugs, warn patients on lorazepam not to operate machinery or motor vehicles, and diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Attention-prone individuals, e.g., drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid sedation.

Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions.

Observe usual precautions with impaired renal or hepatic function.

Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular conditions.

Esophageal dilation occurred in rats treated with lorazepam for more than 1 year. 6mg/kg/day. No effect dose was 1.25mg/kg/day (approximately 6 times the maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn for 2 months of first observation. Clinical significance is unknown, but use of lorazepam for long periods and in geriatric patients requires caution and frequent monitoring for symptoms of upper GI disease.

Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia, some have elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressive effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloridiazepoxide, diazepam, meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may become pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug.

In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.1%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, seasickness, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, motor function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Overdosage: In management of overdosage with any drug, bear in mind that multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring of vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levaterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

Ativan[®] for Anxiety

Dosage: Individualize for maximum beneficial effects. Increase dose gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

How Supplied: 0.5, 1.0 and 2.0mg tablets.

Wyeth Laboratories
Philadelphia, PA 19101

Why one benzodiazepine and not another?

Are you concerned about long-acting metabolites? Many clinicians, as well as pharmacologists, are beginning to draw attention to this problem (see New England Journal of Medicine, April 5, 1979).

In contrast to some older benzodiazepines, Ativan (lorazepam) does not give rise to long-lasting active metabolites. As with all benzodiazepines, you should follow the usual precautions concerning co-administration with other CNS depressants and warn your patients against operating dangerous machinery and motor vehicles.

However, it is noteworthy that Ativan showed no clinical evidence of accumulation even when given in high doses over periods up to 6 months. The half-life of free lorazepam is about 12 hours; steady-state serum levels are attained in 2-3 days. Comparable data for diazepam: 20-50 hours and at least 7-10 days. (The pharmacokinetic profile of a drug can define such characteristics as absorption, distribution, metabolism and elimination but cannot, at present, be directly related to its therapeutic effectiveness.)

Ativan has a convenient b.i.d. or t.i.d. dosage schedule; it is compatible with a long list of other medications and, of course, it is a highly effective anxiolytic agent, as established in numerous nationwide, double-blind, controlled evaluations in thousands of patients.



See important information on preceding page.

Ativan[®]
for (lorazepam)
Anxiety

DOCTOR, are you

- **Disgusted** with **busted** equipment?
- **Tired** of **wasting time** with instruments that don't work?

A NEW SERVICE is offered by HOSPITAL INSTRUMENT SERVICE CO.

With our proven ability to meet the clinical engineering needs of hospitals, a **medical device maintenance management program, custom-designed for your specific needs**, is now available.

This ad appeared in the August issue:

MEDICAL EQUIPMENT NEEDS LOVING CARE TOO

centrifuges; autoclaves; electrocardiographs; scissors; spectrophotometers; otoscopes; ophthalmoscopes; stethoscopes; ultrasonic, short wave and microwave diathermies; electronic and manual sphygmomanometers; suction machines; microscopes; electroencephalographs; traction machines; operating tables; manual and electric wheelchairs; beds; examining tables; operating lights; examining lights; electrosurgical units; isolated power systems; telemetry patient monitoring systems; blood analyzers; fetal monitors; defibrillators; muscle stimulators; surgical equipment and instruments of all types; & more!

sharpening
straightening
repair

calibration

safety inspection

preventive maintenance

FOR SERVICE,

SEND EQUIPMENT TO:

QUESTIONS?

CALL (913) 582-4642

COLLECT!

HOSPITAL
INSTRUMENT
SERVICE CO.

201 West Railroad Avenue
Silver Lake, Kansas 66539

SERVING MEDICAL DEVICE MAINTENANCE NEEDS

CALL US NOW!

Let us serve you by developing a program
proposal from a survey of your equipment.

You can regain confidence in your own equipment, and can predict the cost of its maintenance. Your call to give us an inventory list will produce a proposal for maintenance, calibration and repair with a low monthly charge. CALL 913-582-4642 TODAY!

**Sixth Annual
UKSM—Wichita
Issue**

The Dean's Letter—1979

The University of Kansas School of Medicine—Wichita

RICHARD A. WALSH, M.D.

While the beginning of fiscal year 1979 was marked with several problems, their resolvment at year's end indicates continued growth and stability for the University of Kansas School of Medicine-Wichita.

The State Legislature appointed the Special Legislature Committee on Medical Education to conduct a comprehensive review of the current and future role and mission of UKSM-Wichita. The Committee specifically examined the relationship of the school to community training programs; the ultimate size and scope of all training programs; the extent to which faculty should participate in research activities; and matters relating to the need for a permanent location for UKSM-W.

The special committee held monthly meetings from June to December on these subjects. At the committee's request, the Board of Regents prepared the following recommendations regarding the Wichita campus:

Mission of the University of Kansas School of Medicine — The Board of Regents reaffirmed that the principal mission of UKSM-W should be that of educating medical students and residents in family practice and in primary care, with the recognition that other supporting specialties are essential in order to provide preparation of primary care physicians.

Size of the Undergraduate Medical Education Program — Enrollment at UKSM-W should be maintained at 50 students/class. Even should enrollment drop below the total university level of 200/class, the enrollment of 50/class in Wichita should be maintained.

Faculty Size — Efforts should be made over the next two-three years to secure additional 17 positions and recruit persons to fill them on a full-time basis. This would bring the total number of (state paid) positions to 60, of which 38 would be filled on a full-time basis. Such faculty would be sufficient to

administer the undergraduate and graduate programs and supervise ambulatory care clinics.

Role of UKSM-W in Residency Programs — The Board of Regents recommended that UKSM-W faculty continue to maintain an active role in the development, teaching, and supervision of community residency programs.

Support for Research — For the recruitment of new faculty and guidelines for accreditation for medical schools, the Board of Regents recognized the value of research. The enhancement of research capabilities would provide invaluable experience for students and keep faculty on the "cutting edge" of their specialties.

Location of UKSM-W — The Board of Regents recommended that a permanent home be established for UKSM-W which would provide space for classrooms, faculty staff offices, clinical research laboratories, administration services, and ambulatory care in certain specialties.

The securing of a permanent home for UKSM-W will give added stability to the school and enable the faculty and administration to concentrate on further enhancement of quality in the educational programs. A permanent home would also provide a public identity for the school in Wichita, and give faculty and students a necessary educational base.

In the spring of this year, the Legislature addressed these basic issues and recommendations. The Legislature authorized, through an appropriations bill, the acquisition of E. B. Allen Hospital and grounds as a permanent home for UKSM-W. The Legislature also provided \$1.3 million to begin the renovation of the building. Upon completion of negotiations with Sedgwick County, University and State architects will begin designs to refurbish the interior for offices, classrooms, clinics, and research space. Energy saving improvements will be added to make the structure more efficient.

The decision on a permanent home represents one of the University's important priorities for this past year, and we are glad the Legislature and the Governor have acted positively.

In summary, this has been a good year for UKSM-W. There is legislative concurrence in the long range goals established for UKSM-W by the University and by the Board of Regents. Our attention now must be directed to implementing these goals with the same level of commitment in which the Wichita campus was founded.

Departmental Reports

Pediatrics

RICHARD A. GUTHRIE, M.D., *Chairman*

ESTABLISHMENT of a department of pediatrics at the University of Kansas School of Medicine-Wichita (UKSM-W) was initiated in September 1973 with the appointment of a chairman. While there were 17 practicing pediatricians in Wichita at the time, the School of Medicine had no pediatric faculty, residents or pediatric subspecialists, and provided essentially no pediatric continuing education.

These deficiencies have now been largely corrected through the cooperative efforts of the practitioners in the community and the school, and there are now 29 practicing pediatricians in Wichita including faculty members. In addition to the 20 general pediatricians, there are subspecialists (all of whom are full or part-time faculty members) covering the fields of pediatric allergy, cardiology, endocrinology, diabetes, child development, genetics, hematology-oncology, neurology, rheumatology, infectious disease, and neonatology. In addition, consultation is available through other departments in perinatology, cardio-vascular surgery, infectious disease, gastroenterology, and pediatric nephrology so that the joint efforts of community and school provide complete pediatric services.

This situation made possible, two years ago, certification of a residency program in pediatrics with the result that nine residents (three in each training year) and two Fellows in neonatology are expanding pediatric service. The presence of inhouse physicians at St. Francis Hospital and Wesley Medical Center permits 24-hour service every day. It is hoped that three more residents will be added in the near future.

Besides the clinics conducted at the school in general pediatrics, genetics and diabetes, ambulatory care programs are operated (or supported by faculty participation) at St. Francis Hospital, Wesley Medical Center, St. Joseph Medical Center, Sedgwick County Health Department, and the Mid-American Indian Center. In addition to general pediatric service, these provide clinics for birth defects including cystic fibrosis, myelomeningocele, cleft palate, and PKU as well as thyroid follow-up, perinatal follow-up, and child evaluation center, a child abuse program, a failure to thrive program, a maternal and infant health project, and a pediatric clinic for the Indian population.

Paid faculty appointments to the Department of Pediatrics included, as of July 1, 1979, seven full-time physicians, four half-time physicians, and eight quarter-time physicians. On a part-time basis, community pediatricians — including five subspecialists (one of whom is a pediatric surgeon) — devote an appreciable amount of time to teaching, and bring a much needed practical approach to the educational process for housestaffs and students.

Weekly continuing education programs are sponsored by the School of Medicine including a grand rounds case-type conference originating at St. Francis Hospital every Wednesday morning and transmitted by Med Wave broadcast to other hospitals and the Medical school. A resident subspecialty-oriented conference is also transmitted by Med Wave from St. Francis Hospital on Thursday noons. At Wesley Medical Center on Friday noons, a pediatric seminar featuring local or outside speakers of national reputation is presented, and once a month this takes the form of a clinicopathologic conference. All of these programs are open to medical professionals over the state, and full day programs are offered twice yearly.

A two-day postgraduate program in April 1978 featured Dr. Lula Lubchenco, Denver, presenting "Follow-up Evaluation of the High Risk Infant" at Wesley Medical Center. One of three such programs to be sponsored in 1979 bringing outstanding faculty of national prominence, was a conference on bone tumors held in July. "Pediatric Topics of Interest to the Practicing Pediatrician and Family Physician" will be the theme of a one and one-half day conference in October.

It is anticipated that neonatal services to high risk infants will be expanded during the next two years with the acquisition of another neonatologist and another child development specialist. Evaluation of more children with birth defects, mental retardation, learning disabilities, hyperactivity, and other developmental disabilities will be possible.

The formation last year of the Kansas Regional Diabetes Education and Research Center has focused added attention on the Juvenile Diabetes Program with the addition of two nurses and a dietician who conduct full week training courses for diabetics and professionals on alternate weeks. Additional professional personnel will be added, and a research labo-

ratory is being developed.

Plans for the future include an adolescent inpatient and outpatient program, expansion of the Maternal and Infant Project with the State Department of Health, and the development of a children and youth program in cooperation with the state and county health departments. Educational programs for professionals will be promoted in order to extend these benefits to children in all parts of the state.

Preceptorship

DEAN HEADLEY, M.P.H., *Coordinator*

THE PRECEPTORSHIP program of the University of Kansas School of Medicine has been an important and rewarding clerkship for medical students in Kansas. Many facets of the preceptorship program have changed since it was originally initiated in 1951, and undoubtedly the program will undergo many more changes in the years to come. The program in Wichita has been under the direction of Robert Manning, M.D., since July 1978. Dr. Manning continues to emphasize the one-to-one learning relationship that has traditionally been a cornerstone of medical education.

Over the years, emphasis on primary medical care disciplines has been increased in the placement of students with rural preceptors. The cooperation of the more than 175 physicians in rural Kansas participating in the Preceptorship Program has been rewarding for citizens, physicians, and the university. At present, students from both Wichita and Kansas City are placed in communities across Kansas. This spring, students from the Wichita campus were placed in literally all four corners of the state. Reported experiences have consistently shown that returning students are impressed by the scope of practice of the rural physician. Also, students are appreciative of the opportunity to learn and obtain a real-world experience in a rural setting.

As UKSM returns to a four year educational program, the expansion of the preceptorship experience is being considered. At the present time, a proposal is being discussed to expand the rural preceptorship to an eight week rotation instead of the present four week term. This increase in contact allows the preceptor more time to communicate, and the student to appreciate the subtleties of medicine in a rural setting. As the program of medical education moves to

a four year curriculum and the term of the preceptorship program increases, a larger commitment on the part of the practicing physician will be necessary. This larger commitment must be continually supported by the university through continued attention to clarity of educational objectives and consistent administration.

Looking at the future, it seems that continued effort must be made to foster continuity of this program statewide while emphasizing real world experiences for senior medical students in rural settings. It is inevitable that there will be differences in program details relating to students at the Wichita or Kansas City locations. These differences should be minimized while allowing each location flexibility in meeting the needs of each student.

Enthusiasm for and participation in the preceptorship program by practicing rural physicians should be the primary consideration. It is only through cooperation, participation, and support of the practicing physician that the preceptorship program will thrive, grow, and continue to meet basic educational needs of the medical student.

Psychiatry

GEORGE DYCK, M.D., *Chairman*

ONE-TO-ONE teaching might seem to be an anachronism in the age of mass production, but we have found it a very viable and even necessary way to teach medical students the psychiatric aspects of medicine. Students are assigned one-to-one to practicing psychiatrists — members of the Department of Psychiatry — for their eight-week basic clerkship in psychiatry. The bulk of that time is spent in the hospital where the particular preceptor has the majority of his or her patients. The rest of the time is spent in lectures, seminars, and presentations organized by the department for groups of students. Despite the apprehension and feeling of strangeness with which the students often approach their rotation in psychiatry, the clinical experience with the preceptor has invariably proved to be the most popular part of the clerkship during the five years that this system has been in operation.

The system was devised initially when there was no house staff and only one full-time faculty member so that there was no choice but to assign students to clinical faculty in the community. Because there were sufficient psychiatrists who had volunteered to

participate in this program and there were not many students at that time, it was possible to assign one student to one psychiatrist. Although we were concerned about lack of uniformity in the experience with each student being exposed mainly to only one clinician, this appears not to have created a serious problem. At this level of experience the student needs, most of all, one role model so that he or she can make a beginning in dealing with the psychiatric aspects of medicine.

As class size increased, we were able to involve more psychiatrists in the community so that we generally were able to maintain the one student to one clinician ratio. Four different clinical settings — St. Francis Hospital, Wesley Medical Center and St. Joseph Medical Center in Wichita, and Prairie View Mental Health Center in Newton — serve as loci for the students' base of operations.

In the past few years, a psychiatric residency program has been established, and house staff are available to participate in the teaching process with students. We have nevertheless elected to continue the preceptor type of arrangement because it allows for more flexibility in addressing each student's particular needs. Our faculty has had five years of experience with students and is able to quickly judge the level of experience and aptitude of each student so that the teaching can be directed to the particular need of that student. Whenever a teaching program is directed at the "average" student, there is much wasted motion and effort because the "average" program does not happen to fit the need of a particular student. Therefore, although it may seem inefficient to engage in one-to-one teaching, it effects the optimum experience for the student, and we believe that this offsets the apparent inefficiencies.

VA Program in Internal Medicine

M. H. WELCH, M.D.,

*Associate Professor in Internal Medicine;
Chief, Medical Services, VA Hospital in Wichita*

RESIDENT ROTATIONS from the Wichita community program began with two residents at Veterans Administration Hospital in September 1976. This followed a period of inactivity in internal medicine training at this facility. In 1978, the number increased from four to seven residents, each assignment lasting two or three months. A site visit during

the year by a representative of the Liaison Committee on Graduate Education resulted in accreditation of the integrated residency program with VA as a component.

Resident and student education at this hospital are inseparable. Two teaching services are each composed of two residents in the first post-graduate year assuming primary patient care with supervision by a third year resident and an attending faculty member. Two medical students serve basic medicine clerkships as members of each team, participating in the care of 20-25 inpatients.

The structure of these teaching units is designed with specific goals which appear to be well served. Junior residents are provided with an opportunity to identify as physicians with a clear responsibility for patient care, seeing the patients first and formulating diagnostic and treatment plans for close review and critique by senior residents and faculty. Senior residents, in turn, have a distinctly different role as supervisors with responsibility for a larger number of patients as well as teaching. Students are provided with role models at more than one level of experience, resulting in opportunities for free discussion. Generally, even the most inhibited student finds a team member of whom he can ask a question at any level of complexity.

The services are designed for the provision of primary patient care in general internal medicine. Consultative services are provided in all major medical subspecialties by a panel of physician-faculty members drawn from VA staff and from the private practicing community and the medical school. Within this framework, trainees learn to assume responsibility as managers of medical care, coordinating services provided by specialists, and ensuring that optimum use is made of available resources for patient benefit. In the process of patient care, residents and students all benefit from the opinions of consultant physicians with special expertise. Fragmentation of care is prevented, however, and trainees are exposed to a wide range of medical problems.

Patient care management in this setting includes also a range of non-physician services, such as social service and psychological counseling, physical and occupational therapy, and associated rehabilitative services.

An additional rotation for a single senior medicine resident provides subspecialty consultations by him to general medical services and medicine consultations for surgery, urology, and orthopedic patients. Supervision is provided by a group of selected faculty members including one individual who coordi-

nates the service. Rotation on this service is an elective experience available for medical students.

In general and orthopedic surgery, rotation of two senior residents from each discipline occurs from St. Francis Hospital training programs. These rotations have been ongoing for several years and provide experience in abdominal, thoracic, and vascular surgery as well as prosthetic joint placement. Supervision is by VA staff and community consultants including UKSM-W faculty.

In allied health education, a total of eighteen separate programs utilize Wichita VA for clinical training under the supervision of Wichita State University, the University of Kansas, Kansas State University, Wichita Area Vocational-Technical School, Hesston College, and the Wichita Collaborative Psychology Internship Program. Disciplines involved in these programs are gerontology, nursing, psychology, speech pathology, physical therapy, dental hygiene and dental assisting, social welfare, pharmacy, dietetics, medical technology, respiratory therapy, and physician assistant training. Among the most active programs are those in medical technology and physician assistant (PA) training sponsored by Wichita State University (WSU). The administrative offices and facilities for didactic teaching for these programs are located on VA grounds. Regular clinical rotations at the hospital are provided for senior PA students, and junior students regularly receive instruction here in physical diagnosis.

Since research is in many ways a logical outgrowth of education and is likewise a stimulus to good patient care, a laboratory for investigation into causes of hypertension and management problems in diabetes has been established during the past year. The laboratory is a joint venture of UKSM-W and VA with contributions made by WSU. Space and major items of equipment are VA contributions, and additional equipment and technical personnel are provided by the medical school in support of projects designed by faculty members in the departments of Internal Medicine and Pediatrics. The laboratory is equipped for radioimmunoassay of a wide range of endocrine and other substances. Insulin, renin, angiotensin, and antidiuretic hormone are of immediate interest to VA and medical school investigators.

Adjacent to the research laboratory, a modern microbiology laboratory has been developed during the past year primarily for diagnostic services in support of patient care. It will also serve as a base for clinical rotations of WSU students in laboratory technology in the near future.

Plans for 1979-80 include an additional fourth year resident in internal medicine who will serve as chief resident in the discipline, and an internal medicine rotation for a resident in psychiatry. An area vacated by the administrative offices will be remodeled over the next two to four years to provide space for ambulatory patient care. Plans will be completed next year for construction of a new addition to house a modern surgical suite, clinical laboratory, radiology, intensive care beds, and supply services.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

**Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612**

The Medical School

Present and Future

RICHARD A. WALSH, M.D., Dean, UKSM-Wichita

THE UNIVERSITY of Kansas School of Medicine-Wichita (UKSM-W) is a complex topic. This derives from difficulties encountered in defining of functions; establishing criteria and guidelines for a community based school.

The situation is further compounded by the fact that UKSM-W is a community based school, a term that is coming into considerable dispute at the national medical education level, because many schools are finding it necessary to reach into the community for a patient population and at the same time continue to function as a teaching facility. Some new generic term is being sought to define those schools without hospitals that sets them apart from the older established academic university schools.

This paper will deal directly with the controversial issues that have arisen in the past both in the hospital administrative community and the physician community. The discussion will center on education, service, research, and administration — which are the focal points from which these needs and problems arise.

Let us look first at education — the *raison d'être* for the school. The majority of physicians in this community (Wichita) have chosen to accept appointments to the faculty of this school to participate in the education of 100 undergraduate and 225 graduate students from The University of Kansas and the community. The factors that make our educational program different from the university type of program is this participation and the environment in which it occurs.

The concerns of the physicians who have made personal commitments to the program are: Where do I fit in? Where does my teaching fit into this program during the next ten years? This can be answered by defining where it has been since the school began operation.

A community based school is dependent upon a volunteer and part-time faculty for a significant part of its teaching, and for a significant number of the patients through whom that teaching is done, with a relatively small core of full-time faculty. This relation will and must continue to exist. Those in medical education looking at the situation from a national point of view find that the trend in the larger univer-

sity academic world is away from full-time faculty to what is known as geographic full-time faculty. This change is being pressed by the loss of indigent patients who have no financial access to medical care, and the enormous increase in the cost of medical education that has created a tremendous demand for faculty to generate income to support its own salary as well as the research performed within the institution.

Sixty years ago, the Flexner Report condemned the schools of the early part of the century as being apprenticeship training with no educational element or substance. As a result, there was a reform in medical education which overcompensated for those factors and moved the educational program from the community into the university structure with full-time faculty. Since 1960, counterbalancing forces within the economy have created an impact that is in the process of partially reversing that trend.

Third-party payment sources for the majority of the people in this country have eliminated the county hospital which provided the universities with a patient population. This development makes it economically unfeasible for full-time faculty to pursue their isolated academic existence.

At the present time there are very few full-time faculties in the United States. The majority of faculties have moved to geographic full-time status wherein the faculty members are committed to teaching and research activities while pursuing a practice of medicine either within a university hospital or an affiliated hospital. Incomes which they generate are in turn divided up by the institution — which guarantees them a minimum base — and that income is partially returned to the faculty person to sustain salary levels, and partially utilized to support research in the department and to support the school in its diverse programs.

This arrangement has evolved since 1960, becoming the standard in well over 90 per cent of schools in the United States, and everywhere creating tension between faculties and communities. The resolution of this tension is of primary concern to education administration today.

The necessity for a core of full-time faculty is dictated by the Liaison Committee for Medical Edu-

cation (LCME), whose primary concern is for the continuity of education and support of that process so that medical education does not regress into apprenticeship training — uncoordinated, unsupervised, unevaluated.

The change in the medical community is such that the competence of those practicing in the community is equal to that of the full-time faculty. However, the commitment of community physicians to their patients imposes limitations that allow them only isolated hours to devote to education of students. While they accept this burden willingly and in an enthusiastic and proper manner, it does not provide the continuity essential and critical to an educational program.

The LCME guideline in regard to the existence of a core faculty was reaffirmed at a recent meeting directed to accreditation standards for a community based medical school in Chicago. The members of the Liaison Committee insist this was one of the critical factors for evaluating future accreditation of any medical school.

What constitutes a core faculty, and how does one make that determination? No specific figure has been developed. The important factors are delineated in a comprehensive discussion in *Medical Education and the State*, by Ronald B. Christie, who spent a year with the Fogary Foundation studying medical education in ten countries and compares the different aspects and problems of medical education. The book presents a broad view of the problems of medical education.

The data in *Table I* relate to part-time and full-time clinical teachers. The comparison of clinical teachers in the various countries bears emphasis. In the United States there are 1.1 students/clinical faculty; in Britain, 3.3 students; in Canada, 8.0 students; and in Australia, 1.6 students. The difference in ratios between the total faculty of all full-time clinical teachers — which leads to a ratio that is 16:1 in Britain — accents the fact that in the United States

there has been a swing to almost total full-time clinical faculty during the past 50 years. This consideration and range bring the complexity of the situation into focus. The area of graduate medical education must also be considered; the ratio nationally accepted is six residents/one faculty person.

During the past year, as a part of planning effort by the Chairman and faculty members at UKSM-W, the Executive Faculty Committee has discussed the comprehensive needs for the school. One of these major areas relates to the projected number of faculty. Since the school has a fixed number of students and a stable number of residents — and this will not change significantly during the next ten-year period — the requisite number of full- and part-time faculty can be accurately projected. Available part-time and volunteer physicians in the community, as well as the support to be provided by the state during the next five to ten years, suggest a figure of 40 full-time state funded faculty. This gives the medical school a ratio of 2.5 students/full-time faculty; when graduate education is considered, the ratio becomes 3.05/full-time faculty, a ratio closer to that between Britain and Australia, and certainly one significantly different than the ratio in the academic university center within the United States. This is considered an acceptable core ratio of full-time faculty in terms of the educational requirements of the program in providing continuity in organization and educational evaluation. This ratio would meet the national accreditation requirements and would be acceptable to political economics in the state legislature and, hopefully, to the local community. The practicality of this is totally dependent on the participation of part-time and volunteer faculty, which we plan to continue. A projection of faculty staffing is presented in *Table II*; a breakdown of total personnel in *Table III*.

The full-time faculty would be less than one-third of what would be required by an academic center, and it is necessary to determine the effect of demands on this faculty. How would they function? How

TABLE I

	Clinical Students	Part-Time	Full-Time	All	Student to Full- Time	Students to Total
	A	B	C	D		
Great Britain (1966-67)	6,687	1,629	419	2,048	16	3.3
U.S.A. (1967-68)	16,252	—	15,435	—	1.1	—
Canada (1966-67)	1,962	1,894	640	2,534	3.1	0.8
Sweden (1968-69)	1,810	—	828	—	2.2	—
Australia (1970)	2,505	1,349	254	1,603	9.9	1.6

TABLE II
FACULTY STAFFING

<i>Proposed EFT</i>		<i>Present EFT</i>	
FY 1979	FY 1980	FY 1981	FY 1982
43.1	50	55	60
20 Full-time			40 Full-time
23 = 70 Part-time			20 Part-time

TABLE III
PERSONNEL
Total — 184

<i>Full-Time</i>	<i>Positions</i>	<i>Part-Time</i>
23	Chairmen/faculty	70
18	Administrative	5
40	Secretarial/clerical	0
16	Residents	0
2	Psychology interns	0
0	Student assistants	10
	Volunteer faculty	359

would they relate to the community? These questions encompass not only the meeting of academic standards, but also some harsh economic realities occurring within the financing of medical schools. The first requirement of the full-time faculty is commitment to education. Faculty persons devote 40-50 per cent of their time to educational endeavors. In this community, this involves graduate as well as undergraduate education, and we feel that these are inseparable commitments. The second requirement lies in the area of research and service, which impinge on the economic realities of the medical school. Many members of the medical community erroneously believe that full-time faculty salaries are paid totally by the state (the state pays approximately 40-60 per cent of faculty salaries at UKSM-W). In order to attract quality faculty and to pay competitive wages, it is necessary to supplement the state salaries with income. Also, although the state has a qualified commitment to provide some research facilities and equipment, it has policy of providing no research support monies to the Medical School. The development of research within the school is dependent on dollars generated from fac-

ulty income, and it is urgent that we specifically deal with these realities at this time.

The average faculty person — because of the workload imposed — sees fewer patients, generates less income, and is unable to compete effectively with private practitioners within the community. This is a situation accepted by faculty members, but it is not well known in the community.

UKSM-W must develop clinical research projects to maintain academic excellence and to provide the faculty with the opportunities they need to meet their career goals. This critical need is only now being addressed.

While this is a summary of some of the central issues that the school must address and answer, immediate solutions cannot be expected. Only through continuing efforts can UKSM-W, with the help of the medical community, hope to resolve these basic issues regarding education, research, and service. We are in the process of molding these forces into a fine medical school of which the state and medical community will be proud.



AMERICAN MEDICAL ASSOCIATION 1979 INTERIM MEETING OF THE HOUSE OF DELEGATES

Honolulu, Hawaii

December 2-5, 1979

Update

Preference for Rural Practice Among Graduating Medical Students in Kansas

G. E. LESSARD, Ph.D.,* *Wichita*

AVAILABILITY OF PHYSICIANS for practice in underserved areas of Kansas has been of major concern to the Kansas Legislature, The University of Kansas, medical educators, and communities in the state. Recently several attempts have been made to reduce the scope of the problem. For example, "Kansas Health Day" was established as a joint effort between communities in need of physicians and medical educators. Its purpose was to bring together prospective physician candidates (students and residents) with community leaders in hope of fostering mutual attraction. Rural Health Weekend, a voluntary program designed to acquaint students with rural practice, has been only warmly received.

In 1978 the Legislature implemented a scholarship program for medical students through which tuition and expenses in medical school would be forgiven or reduced in return for post-graduate practice in designated areas of the state. Although students reacted with litigation against a substantial increase in tuition, the basic intent of the program was genuine and is seen as a potential solution to the problem of maldistribution of physicians in Kansas.

Practice Location Choice

Various studies have sought to ascertain reasons for students' practice location preferences.¹⁻³ The Association of American Medical Colleges (AAMC) conducts an annual survey of United States medical school graduating seniors and focuses on this and other issues.⁴ In its 1978 survey, it found that "characteristics of the community (cultural, educational, recreational, etc.)" was deemed the most influential factor in the decision for practice location. Three other factors were nearly as influential: (1) geographic or regional location; (2) availability of adequate hospital facilities; and (3) the size of the community.

Kansas students responding to the AAMC survey in 1978 (N = 121) revealed their preferences for Kansas and for geographic location. Slightly more

than 33 per cent of the Kansas students responding stated that they are likely to remain/return to Kansas to establish practice. In a similar survey conducted by The Division of Educational Resources & Development, UKSM-W, 42 per cent (N = 23) of those

Various efforts to alleviate the shortage of physicians in underserved areas of Kansas have resulted in only limited success. A comprehensive unified approach by all concerned parties may provide a solution to this serious problem.

responding to the Graduate Follow-up Survey stated that they would probably establish practice in Kansas.

Kansans responding to the AAMC Survey indicated certain preferences for the setting in which they would practice. Nearly one-fourth (24%) preferred a city of moderate size (population 50,000 to 500,000). More than one-fifth (21.5%) preferred small cities (population 10,000 to 50,000 — other than suburbs). Some 17 per cent would prefer a town with a population of between 2,500 and 10,000, other than suburbs. Only three students of the 121 responding to the survey expressed a preference for a small town (population less than 2,500).

Similar results were found in the UKSM-W Graduate Follow-up Survey. Of those responding, 71 per cent expressed a preference for practice in an urban or suburban area; 11 per cent stated that they would likely establish practice in a rural area.

Physician Influence

Whereas much research has been focused on the influence of such factors as hometown, spouse preference, community characteristics and the like, little evidence exists regarding the influence of practicing physicians. The AAMC survey revealed a small amount of influence of medical school faculty on specialty choice but did not consider this factor regarding practice location.

Most medical schools in the United States are

* Director, Division of Educational Resources and Development, University of Kansas School of Medicine-Wichita.

located in large metropolitan areas. Reasons for this include the availability of patients to provide supplemental income for physician faculty. It is understandable that the urban setting of a large medical school — with its abundance of hospital, allied health, and technical services — provides a profound impression on medical students.

Few graduating medical students are willing to consider solo practice after residency training, as evidenced by the AAMC survey. Only 4 per cent of both Kansas respondents and respondents from all medical schools expressed such a preference. The majority of all students prefer to practice in a group of three or more physicians.

The influence of the urban medical school and the community itself provides a role model for medical students that tends to discourage both solo practice and rural practice, which often, obviously, are synonymous. Even so-called "community-based" medical schools, removed from the medical center complex, exist in urban settings which, if smaller than the parent campus, still provide a health care model that emphasizes large bed capacity hospitals and defined allied health support.

The influence of such programs as the preceptorship has been documented.⁵ Nearly half the students surveyed in FY78 indicated that they had decided on a practice location before entering medical school. In Kansas, we have found that the preceptorship experience has little influence upon practical location choice. Less than 10 per cent (Total N = 176) stated that they decided on a preferred practice location during or after the preceptorship. Only 16 students expressed a preference for a small town (less than 5,000) or rural areas.

Several factors affect this limited influence. First, the preceptorship experience is usually scheduled during the last semester of medical school after students have been selected for residency training and after more than three years of influence by the medical school setting and its faculty. Second, students are often assigned to locations not of their choosing. Third, the physician to whom the student is assigned is not actively involved in medical school faculty affairs. Fourth, the health care resources (personnel and equipment) may not be as sophisticated as those at the medical center. Fifth, little or no attempt is made to acquaint the student with the community itself except as the preceptor is willing or able to do. In addition, married students are not usually permitted to bring their spouses or families to the rural community. Many students are also surprised to be called upon to perform tasks that are routinely performed by special health professional teams in urban

settings (*e.g.*, insertion of IVs). The influence of the rural physician is perhaps too little, too late and may well be too threatening to students who view rural practice as professionally isolated.

A study conducted by the author dealt with views of both urban and rural physicians regarding attributes of the "good" practicing physician.⁶ It was hypothesized that the views of these two groups would be relevant data for the medical school faculty for it would: (1) provide a prioritized list of important attributes that ought to be assessed in medical students; and (2) identify any differences of opinion between the two groups that might provide additional data regarding the choice of rural areas for practice. It was felt that if rural physicians responded differently then perhaps the nature of these differences might be used to alter the medical school curriculum in order to increase the number of graduates choosing rural practice.

Results

Results of the study provided data for further analysis and discussion. There was general agreement between the two groups regarding those attributes that reflect the "good" physician. Slight differences in rank order of the items occurred; however, most felt that personal characteristics (honesty, integrity) were most important.

Variation was noted among the medical specialty groups within the urban physician population. For example, Ob-Gyn specialists tended to feel stronger about most attributes, consistently reflecting higher mean scores on the survey instrument.

Rural physicians placed a higher importance on those attributes relating to a physician's interpersonal skills (relations with patients, families, and allied health personnel), whereas urban physicians felt slightly stronger about professional conduct (especially the proper use of consultation).

The five most important physician attributes reported by rural and urban physicians are:

Rank	Rural	Rank	Urban
1.	"Has intellectual honesty. . . ."	1.	"Has intellectual honesty. . . ."
2.	"Is strict about honoring confidences; avoids and discourages gossip."	2.	"Has good clinical judgment. . . ."
3.	"Is considerate of others; is alert to patients' convenience and comfort, courteous, tactful."	3.	"Is considerate of others; is alert to patients' convenience and comfort; courteous, tactful."
4.	"Has good clinical judgment. . . ."	4.	"Readily refers patients when it is to their advantage to do so."
5.	"Is emotionally stable."	5.	"Is of unquestionable integrity, high principled."

The five most undesirable attributes were felt to be the following:

Rank	Rural	Rank	Urban
1.	"Is devious, dishonest, deceptive."	1.	"Is a narcotic addict."
2.	"Is a chronic alcoholic."	2.	"Is summoned frequently before monitoring committees for such things as malpractice, unnecessary surgery morbidity/mortality rates, etc."
3.	"Is summoned frequently before monitoring committees for such things as malpractice, unnecessary surgery, morbidity/mortality rates, etc."	3.	"Is a chronic alcoholic."
4.	"Is a narcotic addict."	4.	"Is devious, dishonest, deceptive."
5.	"Exhibits unprofessional, unethical conduct."	5.	"Is negligent in handling of patients, uses slipshod methods."

Conclusions

The results of the author's recent study have provided faculty and others interested in medical education in Kansas with an agreed-upon set of competencies for the "good" practicing physician. These can serve as measures of medical student performance, and in the case of certain qualities identified in the study, as important characteristics to consider in applicants for admission to medical school.

The study revealed little difference among rural and urban physicians regarding the importance of the attributes. Clearly, then, the physician's feelings about such attributes is not directly related to his/her choice of location for private practice. In this regard the factors that presently influence students toward (or against) rural practice are probably those that also influence older physicians for either rural or urban practice.

The factors viewed as deterrants to rural practice by students (community cultural opportunities, health resources, educational facilities) are clearly outside the immediate influence of the rural physician used as preceptor during the final months of the medical school curriculum. However, the rural practicing physician could be involved at earlier stages of medical education to serve as a viable faculty role model. For example, students' apparent

apprehension for solo practice and the performance of certain technical skills could be overcome by early exposure to rural physicians and their practices. Spouses and families should be encouraged to visit the community and participate in its activities. The faculty should encourage the involvement of rural practitioners in the development and utilization of procedures to measure the identified attributes in medical students. This process can begin prior to admission and continue throughout the curriculum. This cooperative effort should serve to diminish a prevailing "us-them" attitude among urban medical school faculties which is easily seen by medical students.

The external factors that continue to influence student decisions regarding location of practice remain the most dominant. A concerted effort by communities, state legislators, health planners, practicing physicians, hospitals, medical faculty, and students appears to be the only approach yet untried. Such a unified approach would serve to identify the problems, consider possible solutions, and effectively evaluate the success of agreed-upon alternatives. Cooperative, positive communication among all groups, channeled through a meaningful, organized research strategy, should lead to a plausible solution to a serious Kansas problem.

References

1. Parker, R. C. and Sorensen, A. A.: The tides of rural physicians: The ebb and flow, or why physicians move out of and into small communities. *Med. Care* 15:152-166, Feb. 1978.
2. Cordes, S. M.: Factors influencing the location of rural general practitioners. *West. J. Med.* 128:76-80, Jan. 1978.
3. Schwartz, L. E. and Cantwell, J. R.: Weiskotten survey, class of 1960: A profile of physician location and specialty choice. *J. Med. Educ.* 51:533-540, July 1976.
4. Association of American Medical Colleges, 1978 Medical Student Graduate Questionnaire Survey, AAMC, Washington, D.C., 1978.
5. Preceptorship Programs, Annual Report FY'78, The University of Kansas Preceptorship Program, The University of Kansas School of Medicine, Aug. 1978.
6. Perceptions of the Desired Attributes of Practicing Physicians as Determined by Urban & Rural Physicians. Unpublished doctoral dissertation, The University of Kansas, 1978.

Community Maintenance*

A Program for Chronic Mental Patients

GEORGE DYCK, M.D.,† *Wichita*

REHABILITATION for the chronic mental patient is a frequently lauded objective, but we have fallen short in implementing measures needed to achieve it. The recent Group for Advancement of Psychiatry (GAP) report on "The Chronic Mental Patient in the Community" puts it this way:

The tragic neglect of people chronically disabled by mental illness cannot be blamed on ignorance of appropriate methods of treatment and rehabilitation. We have failed as a nation and as a profession to use methods whose validity has been demonstrated.¹

This is a sweeping assertion to be sure. However, as we look around we frequently see the chronic mental patient being dealt with in a hit-or-miss fashion. In spite of good descriptions in the literature of programs that could be adopted, a large percentage of the chronically ill are left without adequate treatment. Where there is an intact, stable family and a relatively good premorbid adjustment, the follow-up of the chronic schizophrenic patient by private practitioners of psychiatry and others is generally good. Economic limitations, lack of trained personnel, lack of leadership, political problems, and legal restraints combine to prevent implementation of effective programs for the less fortunate. Correction of these deficiencies lags in part because chronic mental patients are not good advocates for their own cause.

Many communities rely almost solely on models that have evolved for the treatment of acute physical illness — a short period of hospital care with outpatient follow-up. However, when psychosocial difficulties complicate the process, the system falls short of providing effective ongoing treatment. To implement a program that provides an appropriate level of service to a higher proportion of the chronically mentally ill, we have to emphasize continuity of care and aggressive pursuit of patients who do not understand the importance of follow-up care. Also, we

need a relatively complete continuum of services, *i.e.*, the appropriate level and kind of care that the mentally ill person will ordinarily require. At one end of the continuum is indirect service such as consultation and support to other social and medical agencies and caregivers who provide service to, or have some type of contact with these people. If these agencies have some understanding of the nature of

The treatment and rehabilitation of the chronically mentally ill has thus far not been addressed satisfactorily for a large part of the population. The complex interaction of biological, psychological, and socio-cultural factors require the development of new models to provide more effective rehabilitation.

mental illness, they will deal more appropriately with people who show symptoms of mental illness.

The other end of the continuum is 24 hr/day hospital care. In between are various levels of intensity and modes of involvement between the professional and the patient appropriate to the particular needs of the individual at that particular time. We have, in the traditional model for medical care, two main modes of care, namely the office outpatient mode and the hospital inpatient mode. Where psychological and social factors are prominent in the patient these two levels or modes do not fit every situation.

For example, consider a hypothetical 25-year-old schizophrenic who has no family and even at his best level of functioning has little insight into the nature of his illness. Except in the acute psychotic phase where he loses control, he does not require inpatient treatment; but he is not sufficiently aware of the need for continued professional care to be consistent in keeping outpatient appointments. He frequently is unable to perform adequately in a job situation without close support and advice even when psychotropic medication is handled optimally. At various times he may need someone to contact him when he does not follow through on an appointment to avoid getting into serious difficulties. He may need someone to interpret his difficulties to his employer so that he

* Presented at the Mid-Continent Psychiatric Society meeting, Wichita, Kansas, September 16, 1978.

† Professor and Chairman, Department of Psychiatry, University of Kansas School of Medicine-Wichita.

Address reprint requests to Dr. Dyck, UKSM-W, 1001 No. Minneapolis, Wichita, KS 67214.

may be less apt to be dismissed from his job and also that his employer may make the best use of his skills. If he is placed in a situation where his relationships with other employees are kept relatively uncomplicated he is apt to do better than if he is given supervisory responsibility. If he does decompensate acutely and gets into legal difficulty, he will need rapid intervention to minimize the danger to his life and his reputation. All this requires the kind of footwork that one person probably will not be able to provide. It requires teamwork which can only occur when there is an organization capable of providing the necessary support.

Although in many cases community mental health centers have not lived up to their promise in providing these services, it is apparent that some community organization invested with the mandate to act on behalf of the community is needed to deal with the kind of care just described, particularly because this individual's cooperative capabilities are not sufficient for the situation to be handled in the conventional manner. We have moved in the opposite direction in recent years because of the concern for the civil rights of the individual patient. In most cases, however, coercion is not required to administer psychiatric care to such patients, but it is important to be persistent. We must also be prepared to use the force of the courts to reinforce persuasion whenever it is indicated and the law makes it permissible. Admittedly, this has become more difficult in recent years as laws have become more restrictive and legal processes more cumbersome. The system seriously inhibits the private practitioner from becoming involved in such cases. This is all the more reason for a community to have an organized system utilizing professionals with specific expertise as well as a specific mandate to deal with any crisis situation. Many communities have crisis intervention teams that are specifically geared to handling such situations in as appropriate a manner as possible.

The alternative to this course of action is the criminalization of a large segment of the mentally ill. We have the choice of doing nothing with the mentally ill person who does not couch his request for help in a way that enables us to respond; he will then frequently become a lawbreaker, either because he cannot discern reality or because he is in such distress that he is driven to provoke a reaction—usually both. The police and the courts are then called in and he is dealt with in the penal system. Even if he is recognized as being mentally ill and diverted into the mental health system, he has usually sustained considerable damage to his self-esteem and reputation by this time, and the task of rehabilitation is made

more difficult. When law enforcement officers know they have a readily available emergency psychiatric service they will often divert the individual early rather than late.

Turning to the post-hospitalization phase of the continuum the patient again frequently encounters a gap that is difficult to negotiate. The surgical patient who is discharged from the hospital following surgery is given instructions to follow to aid in his recuperation, and is seen in outpatient follow-up until he is able to resume normal functioning. Our hypothetical 25-year-old schizophrenic male frequently has no place to live and no job to go to. He may quickly become discouraged and doubt his ability to ever attain the goals he has set for himself. His discouragement then leads to indiscretions that start him on the road to the next confrontation with society severe enough to get him back into hospital or jail. He may never make it to his first appointment time; if he does he may not see it as having any relevance for him anymore.

For these reasons our patient needs a transitioning vehicle from the hospital to the community. For some it may be day treatment. This modality is not easy to use because patients and families do not usually have a prior understanding of what it is or is meant to accomplish. However, a good day treatment program can be very effective not only as a transition but also as a primary treatment modality where 24-hour hospitalization is not necessary or desirable. The problem is that even when it is available, day treatment is not necessarily considered because psychiatrist and patient are unfamiliar with how to use it successfully. At its best the day treatment facility helps the patient negotiate the problems he encounters in resuming his place in the community. A support group whom he can trust allows him the opportunity to rely on its members' ability to interpret reality so as to deter him from committing self-destructive indiscretions.

Another alternative after hospitalization is a transitional living facility. This format encompasses a variety of different programs ranging from relatively structured to quite unstructured. It may be no more than a place to live with minimal supervision which will serve the needs of many patients who, for one reason or another cannot go back to where they came from. With increasing structure and support a greater degree of disability can be accommodated.

Frequently the treating psychiatrist is faced with the reality that neither day treatment, a half-way house, or a combination of the two will provide enough structure, or for other reasons are not suitable for the patient. At that point the state hospital be-

comes a last resort. For those in Wichita, this means sending the patient more than 100 miles away with little assurance that the appropriate kind of treatment and supportive system will be delivered. Much of the difficulty arises through the discontinuity that results from the geographic distance involved. However, it must also be recognized that the large state hospital, with its custodial tradition, generally underfunded and understaffed, has difficulty in delivering uniformly good treatment.

The patient's need is usually for a long-term program of resocialization and remotivation during which time antipsychotic medication gradually returns the individual to improved reality orientation. Then there is a need, often after months — even years — of a structured rehabilitation program, for a highly individualized program of return to more self-sufficient living outside the institution, which may include employment or other self-directed activity. This group is comprised of a small minority of the mentally ill — the 5-15 per cent of schizophrenics who need long-term institutionalization. Most of these do not need to be in a state hospital, as has been demonstrated,² but without an active rehabilitation program most of them will not move toward more self-sufficiency.

We have tried to adapt another old institution to meet these needs — namely the nursing home. The nursing home is usually geared to old people with physical infirmity and the individual who is chronically mentally ill is not seen as a desirable patient. Very little deviant behavior is tolerated from the mentally ill. The threat of return to state hospital hangs over him if he "misbehaves." Psychiatric supervision is often poor so that even the management of medication leaves much to be desired. Sometimes there is a shuttling back and forth between state hospital and nursing home with each place questioning if the patient is in the "right place" when he is sojourning with that particular institution. Nevertheless the nursing home is the place where a large percentage of the chronically mentally ill situate, the rationale being that they are being "returned to the community." Others have said that far from being a progressive development, this is a return to the pre-state hospital poorhouse, and that they are often more neglected in the nursing home than in the old-style state hospital back ward.

There is clearly a need here for a facility that can address itself to the rehabilitative needs of the severely mentally ill person who has not responded sufficiently to acute hospitalization and who is not prepared to handle an independent living situation. The fact that the person has medical needs and voca-

tional rehabilitation needs, as well as the usual need of the indigent for support, would make it seem that some combination of already established systems could help to create such an institution in any community serving a population of 50,000 or more.

Review of past experience at Meadowlark Homestead in Newton — which may be considered as a prototype of a rehabilitation facility for the mentally ill — provides insight into the difficulty encountered in acquiring funding for people in need of such services. Meadowlark is the only institution of its kind in Kansas, and one of only a few in this part of the country. What this institution does is not particularly unique; what is unique is that it is geared specifically to do what is generally done haphazardly and with difficulty by other institutions and systems.

Meadowlark is a private institution established about twenty-five years ago by an idealistic woman who believed that she could provide shelter for a wide variety of emotionally distressed people. She did not at that time see this as being part of a continuum of services, but rather as an alternative free of the bureaucracy and professionalism which she saw getting in the way of providing effective help to troubled people. She quickly became embroiled in many controversies with a variety of authorities who saw health hazards and fire hazards everywhere but could not see or were not competent to evaluate the benefits of what she was doing. The fire and health hazards were corrected and eventually professional help became part of the program, as 26 individuals with chronic psychiatric illnesses were given care. A sheltered workshop was established, although this is no longer part of the facility. It is more feasible now to selectively place patients in jobs around town and carefully monitor their progress. Situated at the edge of town, it is close enough for patients to commute to jobs but far enough away for them to have adequate space and separation from outside distractions. The sense of purpose which the founder brought to Meadowlark continues to be an important part of what makes this program successful.

The avowed aim of the staff — which includes only one social worker and one nurse — is to help every person to function in as independent a manner as possible. For many patients this means that they are soon ready to move into a less structured environment, but often there is no suitable place to go and still continue their jobs. To meet this need a house in town was purchased. There is some supervision by Meadowlark staff during evening and night hours. Patients who do not have a job come back to Meadowlark for the day. Some other patients, after years of effort, were found to be incapable of de-

TABLE I
ANALYSIS OF PATIENTS ADMITTED TO
MEADOWLARK OVER A 5-YEAR PERIOD
(Includes All Patients Who Stayed at Least 3 Months)

<i>Employed</i>	
Discharged	11
At Meadowlark	5
Total Employed	16
<i>Not Employed</i>	
Discharged to nursing and foster homes	7
Discharged to family home	6
At Meadowlark	9
Total Not Employed	22
TOTAL	38

veloping to the point where they could hold a job. A cottage on the grounds of Meadowlark was prepared where they may live with minimal supervision. They now live more independently, but take part in many of Meadowlark's activities.

Meadowlark draws its patients from various sources, many coming from nearby Prairie View, a private psychiatric hospital and community mental health center. Some come from state hospitals. An analysis of all thirty-eight patients who had been admitted to Meadowlark during a five-year period, and who had stayed three months or longer, is presented in *Table I*. Sixteen (42%) were employed, but five of these were still living at Meadowlark. Nine (24%) were still at Meadowlark and not employed. Seven were discharged to nursing or foster homes, and were unemployed. Six were at home with their families and unemployed. By themselves, these figures are not a definitive evaluation of the program's effectiveness, but more than one-half of the patients were employed or at least living at home. Furthermore, the sixteen who were employed at the time of the study had spent an average of four and one-half years each in mental hospitals. This was considerably higher than the overall average of two and one-half years in a hospital for the entire thirty-eight.

The strength of this program appears to derive from its relatively small scope and dedicated staff. Many ex-patients who have found a niche in the community would not have been successfully placed in the community and would not have stayed in an independent living situation were it not for the close support given by the staff and the community mental health center. Many of these people live in the community of Newton, and though handicapped, are more a part of community life and less dependent than they would be in an institution. Without persistent support and individualized attention these are

people who clearly would not have left the institution, and they need some minimal but continuing supervision to remain relatively independent.

Such advantages are widely available for those individuals who have means and family to see that these services are delivered in some measure. The problem is that only a minority of severe chronically ill schizophrenic patients have systematic quality treatment available to them in this country. We have moved beyond the stage of haphazard care for most illnesses. When will we provide a more consistent level of care for the severely mentally ill? Judging from the Meadowlark example, it takes citizens' groups at the local level working in conjunction with professionals to develop a quality program.

References

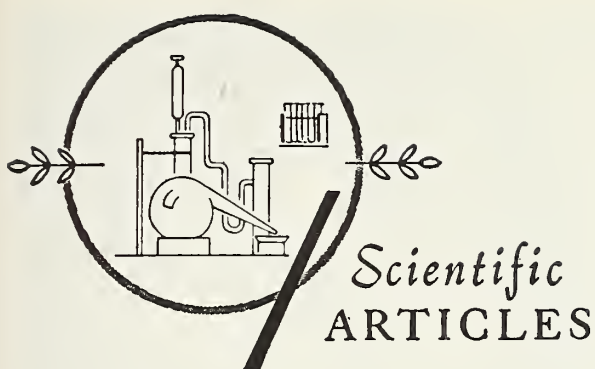
1. Group for the Advancement of Psychiatry: *The Chronic Mental Patient in the Community*. New York, GAP Publication No. 102, pp. 373-374, 1978.
2. Dyck, G.: The effect of a community mental health center upon state hospital utilization. *Am. J. Psychiatry* 131:453-456, 1974.

WRITING

- Don't use no double negative.
- Make each pronoun agree with their antecedent.
- Join clauses good, like a conjunction should.
- About them sentence fragments.
- When dangling, watch your participles.
- Verbs has to agree with their subjects.
- Just between you and I, case is important too.
- Don't write run-on sentences they are hard to read.
- Don't use commas, which are not necessary.
- Try to not ever split infinitives.
- Its important to use your apostrophe's correctly.
- Proofread your writing to see if you any words out.
- Correct spelling is esential.

These "rules" were published in AADE Editors' Journal 5(4):3, 1978 (American Association of Dental Editors) and were subsequently reprinted in Medical Communications 7(1):73, 1979.

They are reprinted here with the permission of both publications.



Reduction Mammoplasty

Autologous Blood and Two-Team Approach

GERALD D. NELSON, M.D.;* TOMMY E. KENDALL, M.D.;†
RICHARD C. SHAW, M.D.;† and BRUCE G. FERRIS, M.D.,† Wichita

REDUCTION MAMMOPLASTY is a surgical procedure to relieve the functional problems of shoulder pain, back pain, degenerative arthritis of the cervical-thoracic spine, and kyphosis produced by macromastia. Techniques have advanced during the past ten years to produce operative procedures that are shorter, safer, and result in better postoperative breast contour than ever before. This review is the study of 100 consecutive reduction mammoplasties performed by a two-team approach, and an evaluation of the autologous blood replacement program that was used in 50 of these cases.

Background

Historical reviews of the origin of reduction mammoplasties have produced conflicting opinions on who should be credited with the first operation. While Durston and Hans Scholler have sometimes received credit, Paulus Algineta, a Byzantine physician of the 6th century, recently has been credited with the first reduction mammoplasty operation.¹ In 1912, Leer described bilateral mastectomies with

free nipple-areolar grafts, and this type of procedure was popularized in 1922 by Thorek. In 1926, Axhausen developed the technique of leaving the nipple attached to the breast, transposing it to a new position, and reducing the skin and breast inferior to the nipple to recontour the breast. This was followed

Reduction mammoplasty is an effective treatment for the functional problems of macromastia. Serious complications are rare. However, minor complications are frequent and usually are related to impaired circulation in the skin. Autologous blood replacement during surgery has reduced the risk of transfusion reactions and disease transmission, and the use of the two-team approach reduces operating time.

by a series of improvements to achieve better contour and provide more safety to the procedure. Bisenberger, 1928; Schwartzan, 1930; and Strombeck, 1960, all developed different methods of nipple transposition, and achieved good results.² Their techniques were frequently used by many surgeons, and with modifications are sometimes still used today. The vertical dermal flap by McKissock in 1971,³ and the single dermal pedicle by Weiner in 1973,⁴ are two of the most popular procedures used today, and represent the methods used in 90 per cent of cases included in this report.

From the Department of Surgery, University of Kansas School of Medicine-Wichita and St. Francis Hospital of Wichita, Inc.

* Clinical Associate Professor, Department of Surgery, UKSM-W.

† Clinical Assistant Professor, Department of Surgery, UKSM-W.

Address reprint requests to Dr. Nelson, 825 No. Emporia, Wichita, KS 67214.



Figure 1. Pre- and postoperative example of nipple transposition with vertical dermal flaps.

Figure 2. Pre- and postoperative example of free nipple graft.

Technique

Present day techniques in this series include the following as routine: The patients begin an autologous blood replacement program two weeks prior to admission. This consists of two units of whole blood being drawn and stored in the Red Cross Regional Blood Bank facility. One unit of whole blood is withdrawn on each of two consecutive weeks before entering the hospital with an additional week waiting period between the last phlebotomy and surgery. This blood is then made available at the time of surgery. The patients receive iron replacement therapy during this period. When the patient is admitted the day before surgery, her history and physical examination are reviewed and complete blood count, urinalysis, partial thromboplastin time, electrocardiogram, and chest x-ray are obtained. Other laboratory tests are obtained as indicated. The preoperative marking of the breasts is carried out in

the sitting position just prior to induction of anesthesia. The surgical procedure is carried out with two teams, each operating upon one breast. The excision of breast tissue is carried out simultaneously on each side, with each excision being weighed for comparison of volume to ensure final symmetry. The correction of ptosis and repositioning of the nipples is done by free nipple grafts if severe macromastia or gigantomastia exists. These grafts are composed of epidermis, dermis, muscular layers, and some ductal elements placed on a recipient bed of dermis. The skin and breast excisions in the free nipple graft cases were carried out in the same pattern as vertical dermal flap operations.

The new location of the nipple was determined by measuring from the suprasternal notch to a site parallel to the lowest point of the inframammary fold in the midline. Two centimeters were subtracted from this measurement and where this distance from

the suprasternal notch intersects with a line drawn from the nipple to the midclavical determines the most desirable point to relocate the nipple (*Figure 1*). Free nipple grafts were considered if patients needed a nipple transposition distance of more than 12 cm. Only ten cases were performed with the nipple-areolar complex being transposed as a free composite graft (*Figure 2*).

Postoperatively the occlusive dressings were removed on the second day and brassieres were used to support the breasts. Most patients were discharged between the second and fourth postoperative day, and returned as out patients for removal of sutures.

Clinical Data

One hundred consecutive bilateral reduction patient records have been reviewed. This group is made up of 50 who were included in the autologous blood replacement program and 50 who had blood replacement as indicated by homologous blood.

The age of the patients ranged from 17-72 years with a mean age of 25 years. Fifty-four per cent of the women were married and 46 per cent were single. The overall average hospital stay was 2.8 days. The average amount of breast removed was 1550 grams, and accounted for an average blood loss of 664 cc in the homologous blood group and 824 cc in the autologous blood replacement group.

Other differences in the autologous blood replacement patients, when compared to the standard homologous replacement group, were that the average autologous blood patients had more breast tissue removed by more than 200 grams. The average patient in the autologous group entered the hospital with 12.0 gms/100 ml of hemoglobin; the homologous patients' preoperative hemoglobin was 13.5 gms/100 ml. The autologous patients also received more blood during surgery and went home with hemoglobin levels of 10.3 gms/100 ml as compared to 11.5 gms/100 ml in the homologous group (*Table 1*).

Average operating time using the two-team approach was one hour and 49 minutes. There was no significant difference between the two groups in this respect, but the autologous group was discharged on the average of the second postoperative day, whereas the average day of discharge for the homologous group was the third postoperative day.

No serious complications occurred as a result of either the surgery or the anesthesia. One case required grafting of the nipple as a result of postoperative necrosis.

Skin loss was recorded 11 times with no skin grafts. Areas of necrosis of the nipple-areolar com-

TABLE I
TRANSFUSION EXPERIENCE

	AUTOLOGOUS	HOMOLOGOUS
PREOPERATIVE HGB and HCT	12.0/35.4	13.5/40.0
AVERAGE TISSUE REMOVED	1537 GRAMS	1675 GRAMS
ESTIMATED BLOOD LOSS	829 ml	652 ml
DISCHARGE HGB AND HCT	10.3/31.2	11.5/33.7
POSTOPERATIVE DAY OF DISCHARGE	2	3

plex with spontaneous healing were noted 24 times, and postoperative drainage occurred in nine cases.

Single vertical dermal pedicle transposition of the nipple as described by Weiner (*Figure 3*) was used 33 times, and the vertical dermal flap described by McKissock (*Figure 4*) was used 57 times.

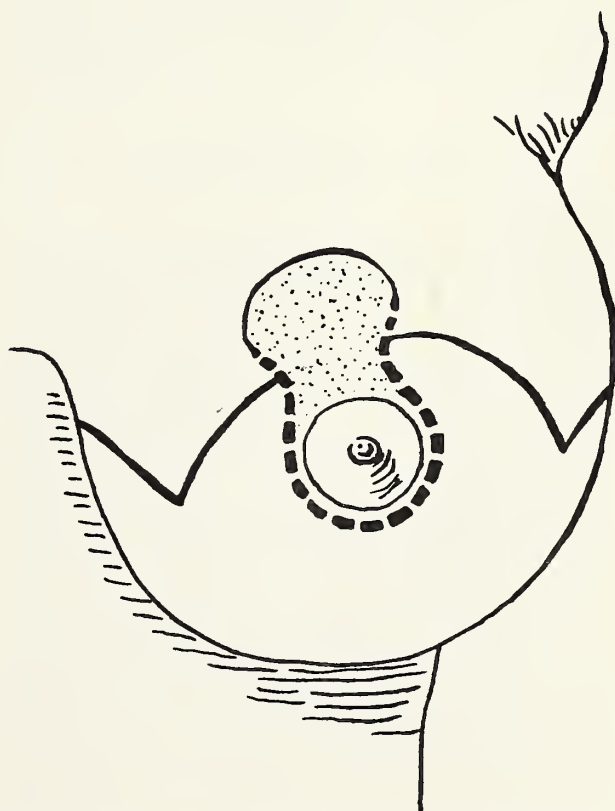


Figure 3. Single dermal pedicle transposition described by Weiner.

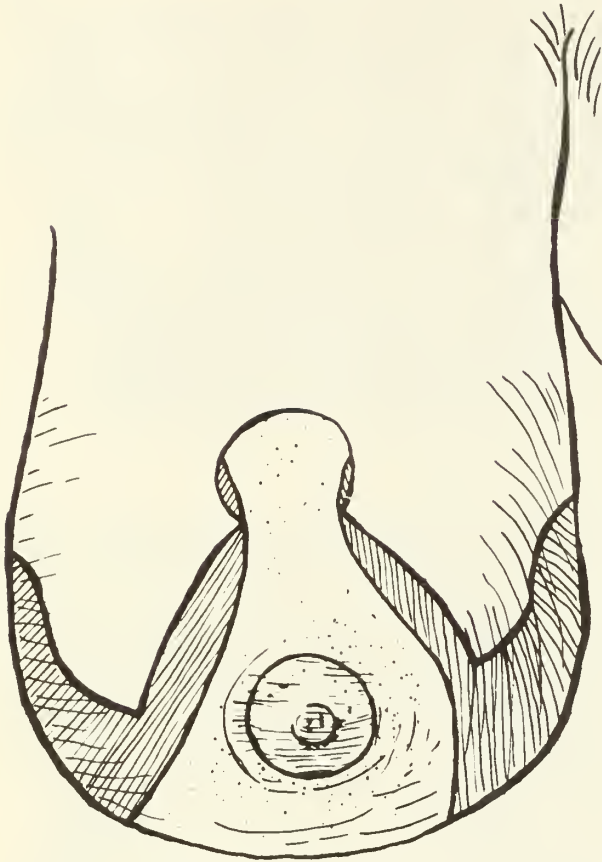


Figure 4. Verticle dermal flap described by McKissock.

Discussion

All patients in this series presented with functional complaints of shoulder and back pain, and improvement in contour following reduction mammoplasty was a secondary benefit. There is no denying, however, that many patients experience an emotional exhilaration from their improved appearance. Increasing numbers of women are seeking reduction mammoplasty each year as they learn of its availability and the almost universal acceptance of these cases by third party carriers. It is interesting to note the comparison of the average age — 25 years — in this reduction mammoplasty series with the average age of 32 years in our augmentation study of 1978.⁵ This may be accounted for by the fact that macromastia occurs during puberty and frequently changes very little thereafter, whereas hypomastia in almost 50 per cent of our patients was caused by postpartum involution. This accounts for the shift of the average age group in augmentation mammoplasty to 32 years.

The use of a separate operating team on each breast is of great aid in reducing operating and anesthesia time. This technique is also very valuable in obtaining symmetrical results. Scales are used to compare the weight of each step of the excisions, allowing the surgeon to be aware of discrepancies in volume of excised breast tissue when it occurs, rather than completing one breast reduction and nearly completing the second reduction before discrepancy in size is determined.

Review of complications indicates that there are numerous minor complications as a result of the surgery. Fifty-three per cent of the patients had recorded problems during the postoperative period. Some type of provision for drainage was made in all cases. The rate of hematoma formation was 7 per cent. All of these were absorbed and none required drainage. The loss of a nipple or areola is one of the most distressing problems encountered in reduction surgery. Minor disturbances in the circulation of nipple and areola were noted in 25 per cent of the cases. One nipple required secondary grafting to obtain a satisfactory result, and in another case a nipple with obviously compromised circulation was removed 24 hours following surgery and replaced as a free composite graft on a new dermal bed. This is a procedure we would highly recommend in cases where the circulation of a nipple is poor. The nine patients with recorded drainage from the breasts represent fat necrosis which sometimes drained for several weeks but spontaneously healed in all cases. The total absence of serious complications in this series and others indicates it is an operation that can be performed with safety to the patient, but needs to be done by a surgeon familiar with dermal pedicles supported by subdermal plexus, composite grafts, and knowledge of the anatomical blood supply of the breast, or these minor problems can easily be cosmetic disasters. Extensive skin and breast necroses following reduction mammoplasties by the inexperienced surgeon have been seen and usually require multiple surgical procedures for correction.

By using moderate hypotension (70-80 mm Hg), Cramer and Chong⁶ have reported 180 breast reductions with blood transfusion being required in only two patients. With normotensive anesthesia we could not duplicate these fine results. While the patients in the autologous transfusion group lost 177 ml more blood than did the homologous transfusion patients, the amount of tissue removed also increased. With an average blood loss of 829 ml and replacement of two units of autologous blood, the autologous transfusion patients left the hospital with a hemoglobin 1.7 gms/100 ml lower than on admis-

sion. From the data in our records, it would appear that replacement of the blood loss by up to two units of autologous blood did not return the patients' hemoglobin to the preoperative value. This, of course, would not take into account any postoperative drainage from the operative site. Patients in the homologous transfusion group experienced a two gms/100 ml drop in hemoglobin, which was greater than in the autologous transfusion group. This is explained by the fact that these patients had an estimated blood loss during surgery of 652 ml and the average replacement was 500 ml. Again, as with the individuals receiving autologous blood, the decreased hemoglobin seems disproportionate to the estimated values of the blood loss, but in this case it is at least obvious that volume of replacement was less than the estimated blood loss. It is clear from this data that autologous blood replacement in this series did not lead to higher postoperative hemoglobins. The differences in volume of blood replacement in the two groups reveal our comfort and willingness to return a patient's blood to his own circulation, and our tendency to be more reluctant to replace blood losses with homologous transfusion.

More importantly, our autologous patients were not exposed to homologous blood. Homologous transfusions, even under the excellent conditions existing in our medical community, can carry with them a degree of risk. It has been estimated that 5.4 per cent of patients⁷ receiving homologous blood experience some type of adverse reaction. Autologous blood offers several advantages over the use of homologous blood. There is no transmission of disease, *i.e.* hepatitis, syphilis, malaria, cytomegalovirus, and Epstein-Barr virus. There is no risk of isoimmunization to erythrocyte, leukocyte, platelet, or protein antigens; and no risk of hemolytic, febrile, allergic, or graft-vs-host reactions. For those patients in whom compatible blood is unavailable, autologous banked blood insures ready availability; it also eliminates many technical errors of typing and crossmatching which can lead to incompatible transfusions.

Summary

The surgery and postoperative course of 100 consecutive cases of macromastia treated by reduction mammoplasty have been reviewed. The surgical correction of this disorder offers a very satisfactory relief of the patients' symptoms of neck, back, and shoulder pain. The secondary cosmetic improvement has provided a high degree of satisfaction among women who have had the surgery. The frequency of minor complications, most commonly the

result of impaired circulation to the skin, nipple and breast tissue, indicates the surgery needs to be done with extreme care or serious postoperative necrosis may occur. The two-team approach has reduced operating time and improved the results, while the autologous blood replacement has increased the availability of blood and reduced the risk of transfusion reactions and disease transmission.

References

1. *Reconstructive Breast Surgery*. (Georgiade, N. G. ed.). St. Louis, C. V. Mosby Company, 1976.
2. Strombeck, J. O.: Mammoplasty: Report of a new technique based on the two pedicle procedure. *Br. J. Plast. Surg.* 13:79, 1960.
3. McKissock, P. K.: Reduction mammoplasty with a vertical dermal flap. *Plast. Reconstr. Surg.* 49:245, 1972.
4. Weiner, D. L. *et al.*: A single dermal pedicle for nipple transposition in subcutaneous mastectomy, reduction mammoplasty or mastopexy. *Plast. Reconstr. Surg.* 51:115, 1973.
5. Nelson, G. D.; Kendall, T. E., Shaw, R. C. and Ferris, B. G.: Breast surgery, current concepts in augmentation. *J. Kans. Med. Soc.* 79:484, 1978.
6. Cramer, L. M. and Chong, J. K.: Presented at the 50th annual meeting, American Association of Plastic Surgeons, Williamsburg 1971.
7. Baker, R. J.: Transfusion reaction: A reappraisal of surgical incidence and significance. *Ann. Surg.* 169:684, 1969.

CHANGE OF ADDRESS

Please notify the
Kansas Medical Society
of any changes in address

*Help keep the mailing list
up to date*

Bowel Preparations

A Comparative Study

GEORGE J. FARHA, M.D.;* THOMAS M. BEAHM, M.D.;† and
FREDERIC C. CHANG, M.D.,‡ *Wichita*

VARIOUS BOWEL preparations using enemas, cathartics, and most recently, antibiotics have been prescribed by surgeons in an effort to decrease the morbidity and mortality associated with surgery of the large bowel. Although arguments for or against these antibiotics have been strong, the decrease in morbidity and mortality with the use of nonabsorbable antibiotics has been clearly established.¹⁻⁹ It is the contention of this paper that there is no single antibiotic that will adequately reduce the number of pathogens in the colon. It is only when an effective anaerobic antibiotic is added to the regimen that the morbidity and mortality for colonic surgery can be significantly decreased.

The purpose of this paper is to compare two different antibiotic regimens in elective surgery of the colon. The Cohn regimen, 72 hours of kanamycin, will be compared to a modified Nichols regimen of kanamycin with erythromycin base. By using kanamycin in both regimens, the only antibiotic variable is the addition of erythromycin base.

Methods and Materials

One hundred forty-six patients from a single surgical service at St. Francis Hospital were studied from January 1974 to May 1978. The first 73 patients — Preparation I — were placed on a 72-hour clear liquid preoperative diet, cathartic, daily soapsuds enema, and one gram of kanamycin by mouth every hour for the first four hours, followed by one gram of kanamycin every six hours for the remaining 68 preoperative hours. The second group of 73 patients — Preparation II — were given only 48 hours of preoperative clear liquids, an initial dose of cathartic, daily soapsuds enema, and one gram of kanamycin

cin with one gram of erythromycin base by mouth at 1, 2, and 11 PM the day before surgery. No other prophylactic antibiotics were used.

All bowel anastomosis procedures were open in technique using a two layer closure of chromic catgut and silk. When the bowel was first opened, the

Wound and intra-abdominal abscess contribute significantly to morbidity and mortality in patients undergoing colon surgery. A retrospective study of 146 patients who underwent lower gastrointestinal surgery during a four-year period demonstrated a decrease in abscess formation correlated with a drop in enteric anaerobes secondary to the addition of erythromycin base to a previously accepted single drug (kanamycin) program.

mucosal contents were cultured for both anaerobic and aerobic bacteria. These cultures were then smeared immediately on agar plates of chopped meat, blood, and lysed blood for anaerobic bacteria and agar plates of T-seven, chocolate, and blood for aerobic bacteria. These culture results were noted on the patient's protocol and chart.

Postoperatively, the patients were followed for wound abscess, intra-abdominal abscess, urinary tract infection, pulmonary, or other infectious complications. Cultures were taken of these infectious complications and appropriate antibiotics were started once the diagnosis of a postoperative infection was made. Otherwise, no other antibiotics were used except for those of the bowel preparation. The length of postoperative hospital stay was noted as well as the patient's diagnosis and surgical procedure. The data were tabulated and the significance tested by Chi square analysis.

Results

In this retrospective study an equal number of patients were studied in a chronological fashion. The ratio of males to females for Preparation I was 33:40 and for Preparation II was 40:33. The mean age for the two groups was similar (*Table I*).

From the Department of Surgery, University of Kansas School of Medicine-Wichita and St. Francis Hospital of Wichita, Inc.

* Professor and Chairman, Department of Surgery, UKSM-W; Director of Surgical Education, St. Francis Hospital of Wichita, Inc.

† Resident in General Surgery, St. Francis Hospital of Wichita, Inc.

‡ Associate Professor, Department of Surgery, UKSM-W.
Address reprint requests to Dr. Farha, 905 No. Emporia, Wichita, KS 67214.

TABLE I
PATIENT PROFILE

	<i>Prep I</i>	<i>Prep II</i>
Total patients	73	73
Males	33	40
Females	40	33
Age range	16-84 yrs	19-91 yrs
Mean age	59 yrs	63 yrs

Neoplastic disease of the large bowel accounted for 65 per cent of the diagnoses at surgery. Diverticular disease was the second most common diagnosis, and no case of acute diverticulitis was operated on in this series. The most commonly performed operation for these diagnoses was colon resection.

Wound abscesses numbered 14 in Preparation I as compared to only six wound abscesses in Preparation II (kanamycin with erythromycin base). There was only one case of intra-abdominal abscess, that being a pelvic-perineal abscess in a patient whose bowel was prepped with kanamycin-erythromycin base. Since this patient had both a wound and pelvic abscess, the total number of patients who formed a postoperative bacterial abscess was 14 in Preparation I and only six in Preparation II ($p < 0.02$) (Table II).

Incidence of urinary tract infection did not change significantly with either bowel preparation. Urinary tract infections developed in 14 patients with Preparation I, and in 11 patients with Preparation II. Pulmonary complications developed in one patient in each group. Interestingly, the pulmonary infection complication in the patient using Preparation I was a bacteroides empyema.

Each of the three deaths occurring in our study was a patient with malignant neoplastic disease. All three

TABLE II
POSTOPERATIVE COMPLICATIONS

	<i>Prep I</i>	<i>Prep II</i>	
Total patients with wound abscess	14 (19%)	6 (7%)	$p < 0.02$
Total patients with pelvic abscess	0	1 (1%)	
Total patients with abscesses	14 (19%)	6 (7%)	$p < 0.02$
UTI	14 (19%)	11 (15%)	
Pulmonary	1 (1%)	1 (1%)	
Died in hospital	3	0	

patients were in Preparation I group. Although the difference between three deaths in Preparation I and no deaths in Preparation II is not statistically significant, the trend is apparent. The cause of death included hemorrhagic pancreatitis, liver failure, and one who died a "sudden death" (autopsy denied).

There appears to be no correlation between the surgical procedure and the potential for postoperative infectious complication. The high incidence of wound abscess with transabdominal polypectomy makes it apparent that any surgical invasion of the colonic or distal ileal mucosa invites postoperative bacterial complications.

Although a majority of patients had malignant disease, there was a greater number of abscess formations in these patients. Of the six patients in Preparation II who developed abscesses, five had malignant neoplastic disease. Perhaps the catabolic state of these patients favors bacterial infection (Table III).

The most common gram negative aerobe or facultative anaerobe grown from the lumen cultures was *Escherichia coli*. Not-surprisingly, there were

TABLE III
SURGICAL DIAGNOSIS VS COMPLICATIONS

	TOTAL PATIENTS	<i>Prep I</i> WOUND ABSCESS	PELVIC ABSCESS	TOTAL PATIENTS	<i>Prep II</i> WOUND ABSCESS	PELVIC ABSCESS
Malignant neoplastic	44	8	0	47	5	0
Diverticular disease	14	1	0	11	0	0
Ulcerative colitis	2	0	0	5	1	1
Benign polyp	5	3	0	4	0	0
Others	6	1	0	6	0	0
Total	73	14	0	73	6	1

TABLE IV
GRAM NEGATIVE AEROBES & FACULTATIVE
ANAEROBES INVOLVED IN POSTOPERATIVE
COMPLICATIONS

GRAM- BACTERIA	Prep I		Prep II	
	TOTAL COLONIES	WOUND ABSCCESS	TOTAL COLONIES	WOUND ABSCCESS
Citerbacter	1	1	4	0
Corynebacter	4	1	0	0
Escherichia coli	22	6	34	2
Klebsiella				
pneumonia	4	0	7	0
Proteus	1	1	6	1
Pseudomonas	5	1	12	1

22 colonies of *E. coli* in Preparation I patients and 34 colonies were cultured from Preparation II patients. However, in spite of this decrease in intraluminal *E. coli*, there were more abscesses with *E. coli* with Preparation I than with Preparation II (Table IV).

Of the gram positive aerobes, *Staphylococcus aureus* was cultured only on two occasions in abscesses or in the colon lumen. Both were recorded from Preparation I patients. There was no incidence of *Staph aureus* overgrowth.

The number of patients in whom bacteroides was cultured from the bowel dropped from 69 for Preparation I to 33 for Preparation II. There were nine bacteroides species grown from abscesses of patients with Preparation I, and it was grown from only two wound abscesses and one pelvic-perineal abscess of patients with Preparation II (Table V).

Comparing aerobic, anaerobic, and mixed infection, there was no significant difference in aerobic infections from patients receiving Preparation I or Preparation II. The difference in pure anaerobic infections also was not significant. The patients receiving Preparation II, however, had only three mixed infections compared to nine mixed infections in patients with Preparation I (Table VI).

This reduction of infectious complications resulted in a decrease of the postoperative hospital stay. The average postoperative hospital stay for all patients with Preparation I was 17 days (patients with infection, 23 days; patients without infection, 14 days). Patients with Preparation II had an average postoperative hospital stay of 12 days (patients with infection, 16 days; without infection, 11 days).

Discussion

The large bowel and distal ileum are a reservoir of bacteria from which the body is protected by the colonic mucosa. These bacteria may be divided into

TABLE V
ANAEROBES IN POSTOPERATIVE COMPLICATIONS

Bacteria	Prep I		Prep II	
	TOTAL COLONIES	WOUND ABSCCESS	TOTAL COLONIES	WOUND ABSCCESS
Bacteroides	69	9	34	3
Clostridium	27	1	11	1
Eubacterium	26	1	14	—
Fusobacterium	9	1	4	—
Lactobacillus	1	1	2	—
Peptococcus	7	3	1	—
		16		4
		(10 pts)		(3 pts)

organisms with anaerobic metabolism and those that utilize oxygen. The anaerobes, which are 100 to 10,000 times more prevalent, account for a significant amount of morbidity in the colonic surgery patient.¹⁰ The aerobic and facultative anaerobic bacteria, which are responsible for postoperative infections, are the minority group. *Proteus*, *pseudomonas*, and *staphylococci* populations are inordinately small when they are compared to the anaerobes.

The morbidity of colonic surgery is one of postoperative infection. The primary source of the pathogenic bacteria is the colonic reservoir. In this study there is a 75-per cent-positive correlation between the operative cultures and the wound bacteria. The formation of an abscess is dependent upon a bacterial inoculum of sufficient numbers as well as of necessary virulence, immediate availability of compatible substrate, and some impairment of the host's response to infection.¹¹

In an effort to decrease the concentration of bacteria in the potential inoculum, surgeons have utilized preoperative preparation of the bowel. With the mechanical prep there is removal of fecal substrate, but unfortunately the bacterial concentration does not decrease.^{7, 12} Enemas of charcoal, naph-

TABLE VI
COMPARISON OF AEROBIC & ANAEROBIC
INFECTIONS

	Prep I	Prep II
Aerobic	4	3
Anaerobic	1	0
Mixed	9	3
Total	14	6

thallene, iodoform, chlorine, and salicylates were tried with little success during the late 1800s.¹³ Until the advent of antibiotics, one could expect a wound infection rate of approximately 35-40 per cent.

Antibiotics used in the preoperative preparation of the large bowel and distal ileum should have a rapid, highly bactericidal activity, prevent pathogenic overgrowth and, of course, have a low host toxicity.⁶ Although Burke has shown that systemic antibiotics maximally suppress infection when the tissues are saturated before the bacteria enter, there is little place for parenteral prophylactic antibiotics in preoperative bowel preparations.¹⁰ Since it has become apparent that a sterile colon is only an ideal and not clinically attainable, a realistic goal for an antibiotic bowel preparation should be a bacterial count of less than 100 organisms/ml.⁹

Kanamycin, a well known aminoglycoside, was chosen for this study for two reasons. The first part of the study concerned itself with a bowel preparation that used kanamycin exclusively. This regimen has been used extensively in the past and the effectiveness of kanamycin on aerobic and facultative anaerobic pathogens is well known. The addition of erythromycin base kept the antibiotic variables down to one, permitting conclusions on the effect of decreasing the anaerobic pathogens.

One of the concerns with an antibiotic bowel preparation is the possibility of overgrowth of a nonsusceptible pathogen. To avoid this iatrogenic complication, the 19-hour bowel preparation was utilized.⁶ A dose of one gram was given at 1, 2, and 11 PM the day before surgery. This protocol for antimicrobial preparation will ensure an adequate concentration of antibiotic to arrive at the distal ileum and large bowel a few hours before the incision is made at eight o'clock the following morning. This minimal exposure to the antibiotic limits the possibility of emergence of a resistant organism.⁹ Patient compliance is improved because of the decrease in frequency and amount of medication.

Anaerobes, which are the most predominate organism in the large bowel, have a susceptibility to many antimicrobial drugs. The best known anti-anaerobic substances are penicillin, clindamycin, chloramphenicol, and carbenicillin. Another macrolide drug — erythromycin base — has been shown to be effective in suppressing the anaerobic bacteria in the bowel.^{6, 10, 12} Erythromycin base, since it is poorly absorbed from the gastrointestinal tract, is the most effective form of the antibiotic.

Bacteroides is one of the most prominent anaerobes in the bowel. With the advent of improved anaerobic culturing techniques, its role in post-

operative infection is becoming more apparent. This gram negative organism has developed a resistance to antibiotics, *e.g.* penicillin and tetracycline, similar to other gram negative organisms. The abscess formation of bacteroides is remarkably slow in its development. However, a death rate of 35 per cent has been found in all patients with positive blood cultures for the organism.¹⁴ An increased incidence in disseminated intravascular coagulation and pulmonary emboli has also been associated with bacteroides sepsis.¹⁴

The drop in associated postoperative infection complications when erythromycin base was added to a kanamycin bowel preparation is significant. The positive correlation between the bowel flora and the cultured abscess organisms leads to the conclusion that these infections come primarily from the bowel lumen. The decrease in the colonies of bacteroides and the number of postoperative mixed and anaerobic infectious complications demonstrate the effectiveness of erythromycin base. There were no associated overgrowths with this preparation nor was there any other iatrogenic induced morbidity. The kanamycin-erythromycin base 19-hour bowel preparation offers decreased postoperative morbidity, decreased postoperative hospitalization, and increased patient and nursing compliance.

Conclusion

Postoperative infectious complications in colon procedures are usually secondary to intraluminal contamination. Anaerobic infections produce significant postoperative morbidity. Erythromycin base, when added to kanamycin, significantly decreased anaerobic infections and hence, reduced postoperative morbidity.

References

1. Clarke, *et al.*: Preoperative oral antibiotics reduce septic complications of colon operations: Results of prospective, randomized, double blind clinical study. *Ann. Surg.* 186:251, 1977.
2. Cohn, I. Jr.: The value of antibiotic preparation of the large bowel. *Controversy in Internal Medicine* (Ingelfinger, F. J.; Relman, A. S.; and Findland, Maxwell, eds.). Philadelphia, W. B. Saunders, p. 605, 1966.
3. Cohn, I. Jr. and Longacre, A. B.: Kanamycin for intestinal antisepsis. *Surg. Gynecol. Obstet.* 108:100, 1959.
4. Goldring, J.; Scott, A.; McNaught, W. and Gillespie, G.: Prophylactic oral antimicrobial agents in elective colonic surgery. *Lancet* 2:997, 1975.
5. Hafner, C. D.: Antibiotics in colonic surgery. *Am. J. Surg.* 121:673, 1971.
6. Nichols, R. L. *et al.*: Effect of preoperative neomycin-erythromycin intestinal preparation on the incidence of infectious complications following colon surgery. *Ann. Surg.* 178:453, 1973.

(Continued on page 508)

Sanfilippo Syndrome

A Case Report of Mucopolysaccharidosis III A

SECHIN CHO, M.D.,* and KATHERINE PENNINGTON, M.D.,* *Wichita, and*
GEORGE H. THOMAS, Ph.D.,† *Baltimore, Maryland*

MUCOPOLYSACCHARIDOSES (MPS) are rare genetic disorders of which six distinct types have been differentiated by clinical, genetic, and biochemical study.^{1,2} These groups of disorders share striking common clinical manifestations with variations such as coarse facies, dwarfism, hepatosplenomegaly, and multiple skeletal dysplasia. Historically such terms as dysostosis multiplex, "gargoylism," and "lipocondrodystrophy" were utilized for this group of disorders for obvious reasons. Through studies of cultured skin fibroblasts, defects in mucopolysaccharide metabolism have been recognized as the basic fault. A revised classification was proposed in 1972, and most recently by McKusick in 1977, as shown in *Table I*.³

The Sanfilippo Syndrome, or mucopolysaccharidosis III (MPS III), is inherited as an autosomal recessive disorder. Unlike the Hurler Syndrome (MPS I H) — the prototype mucopolysaccharidosis — in the Sanfilippo Syndrome physical changes are less severe, although mental retardation is severe. Corneal clouding does not occur; dwarfing, hepatosplenomegaly, and the degree of dysostosis multiplex are moderate. Increased thickness and density of the posterior portion of the calvaria are specific x-ray findings. By studying mutual correction of the metabolic defect in cultured skin fibroblasts, three biochemically different forms of the Sanfilippo Syndrome have been identified; however, these are indistinguishable clinically.

The following is a case of Sanfilippo Syndrome A with a discussion of the diagnostic approach and differential diagnosis.

A Case Report

The patient (*Figure 1*), a Caucasian male, age 7½ years, had been born at full term to a 33-year-old female. This was her fifth pregnancy; she had one daughter, one son, and two spontaneous abortions. Pregnancy and delivery were not complicated and no

physical abnormalities were noted at birth. The boy weighed 3.1 kg and measured 51 cm in length. Compared with his siblings, his development was significantly delayed. At 22 months of age, he did not talk, and the anterior fontanel was not closed at 27 months. His face was coarse enough to suspect mucopolysaccharidoses at four and one-half years of

Sanfilippo Syndrome (MPS III) is an autosomal recessive genetic disorder presenting a variety of striking clinical manifestations. A case of type A is reported and the diagnostic procedures discussed.

age, and he was placed in special education at the age of five years. The family history was non-contributory, and the parents were not related.

Physical examination revealed a severely retarded boy with a coarse face and uncontrollable and destructive behavior. His height was at the 25th percentile, and his weight was at the 90th percentile growth curve. His neck was short and his hair abundant; no corneal clouding was observed; the liver and spleen were not palpable; and heart sounds were normal. He could not maintain straight posture, all joints were stiff, and mild clawhand deformities were observed.

Skull x-rays revealed thick calvaria and under-pneumatized mastoids; bone age was within normal limits; chest x-ray showed wide ribs and clavicles; and long bone trabeculation was coarse. The vertebral bodies were ovoid. Pelvic x-rays showed hypoplastic basilar portion of the iliac bones, shallow acetabular fossae, and flared iliac wings (*Figures 2-5*).

CBC was within normal limits; Reilly granulation was not observed on the blood smear; and routine urinalysis was negative. Metachromatic spot test was negative; however, the acid albumin turbidity test and cetyltrimethyl ammonium bromide turbidity test in urine for mucopolysaccharidosis were positive. Serum N-acetyl-B-glucosaminidase activity was normal. A skin biopsy was obtained for skin

* Assistant Professor, Department of Pediatrics, University of Kansas School of Medicine-Wichita.

† Director, Genetic Laboratory, John F. Kennedy Institute, Johns Hopkins School of Medicine, Baltimore, Maryland.

TABLE I
THE MUCOPOLYSACCHARIDOSES

Number	Eponym	Genetics	Enzyme Deficient
MPS I H	Hurler	Homozygous for MPS I H gene	α -L-iduronidase
MPS I S	Scheie	Homozygosity for MPS I S gene	α -L-iduronidase
MPS I H/S	Hurler-Scheie	Genetic Compound MPS I H and MPS I S genes	α -L-iduronidase
MPS II-XR severe	Hunter, severe	Hemizygous for X-linked gene	Iduronate sulfatase
MPS II-XR mild	Hunter, mild	Hemizygous for X-linked allele	Iduronate sulfatase
? MPS II-AR	? Autosomal Hunter	Homozygous for autosomal gene	Iduronate sulfatase
MPS III A	Sanfilippo A	Homozygous for Sanfilippo A gene	Heparan N-sulfatase
MPS III B	Sanfilippo B	Homozygous for Sanfilippo B gene	N-acetyl- α -D-glucosaminidase
MPS III C	Sanfilippo C	Homozygous for Sanfilippo C gene	α -glucosaminidase
MPS IV	Morquio	Homozygous for Morquio gene	Galactosamine-6-sulfate sulfatase
MPS V		VACANT	
MPS VI	Maroteaux-Lamy classic severe	Homozygous for Maroteaux-Lamy (M-L) gene	Arylsulfatase B (N-acetylgalactosamine 4-sulfatase)
MPS VI intermediate	Maroteaux-Lamy intermediate	Homozygous for allele at M-L gene or genetic compound	Arylsulfatase B (N-acetylgalactosamine 4-sulfatase)
MPS VI mild	Maroteaux-Lamy mild	Homozygous for allele at M-L locus	Arylsulfatase B (N-acetylgalactosamine 4-sulfatase)
MPS VII	β -Glucuronidase deficiency	Homozygous for mutant gene at β -glucuronidase focus	β -Glucuronidase
MPS VIII	Glucosamine-6-sulfate sulfatase deficiency	Homozygous for MPS VIII gene	N-acetylglucosamine-6-sulfate sulfatase

Adapted from McKusick, V. A.: *Am. J. Hum. Genet.* 30:105-122, 1978.

fibroblast culture. Sulfate (S_{35}) incorporation in cultured skin fibroblasts showed 54 percent corrections after 24 hours Chase (Control showed 79% correction) on one experiment. On another experiment, patient's cell showed 51 percent corrections after 24 hour Chase (Control showed 72% correction). Patient's cells accumulated sulfate (S_{35}) 1.7 times and 2 times higher than controls respectively.

When a patient's skin fibroblast was mixed with known Sanfilippo Syndrome A patient's skin fibroblast, they showed 52 per cent corrections, while known MPS III A patient's cell alone showed 53 per cent correction. Fibroblast was forwarded to another laboratory to measure heparan N-sulfatase activity on natural substrate. Patient's cells hydrolyzed 0 per cent of heparan sulphonate, while skin fibroblasts from a normal person hydrolyzed 80 per cent of substrate.

Discussion

When a genetic disease is studied closely, its genetic heterogeneity is often discovered. What at first is thought to be an entity, may be found to be several clinically similar but biochemically distinct disorders.

In 1976, Hers⁴ developed the concept of lysosomal disease and defined its six characteristics: (1) intracellular storage of material is involved; (2) storage material is heterogeneous; (3) deposition is vacuolar; (4) several tissues and organs are involved; (5) the courses of disorders are progressive; and (6) there is a potential for enzyme replacement.

Two other striking features of lysosomal disease were added later: (1) allelic mutations lead to widely diverse phenotype; and (2) the same phenotype may be produced by one of several different enzyme deficiencies.⁵ Mucopolysaccharidoses satisfy these

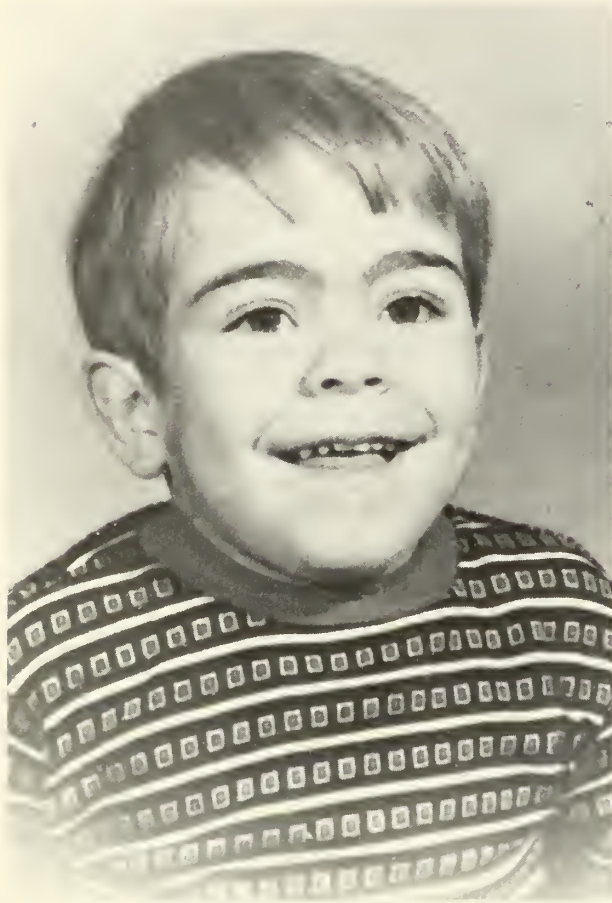


Figure 1. Patient at the age of 4. The facial features are coarse.



Figure 3. Basilar portion of iliac bone is hypoplastic, acetabular fossae is shallow and iliac wings show flaring.



Figure 4. Medial portion of clavicle and ribs are somewhat wide.



Figure 2. The calvaria is thick. Pneumatization of mastoid is poor.

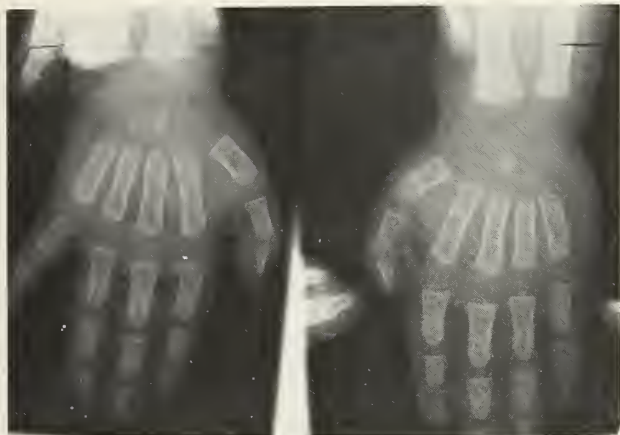


Figure 5. The bone trabeculation is coarse.

criteria. To say that a disorder is lysosomal disease means the defect is in a degradation pathway.

Neufeld and her co-worker,⁶ using cultured fibroblasts, successively demonstrated deficiency of so-called corrective factors in individual mucopolysaccharidoses. The factor deficient in each clinical syndrome was termed the corrective factor for that condition. Two notable exceptions — which prompted reclassification of MPS in 1972 — were found by this approach; these were: (1) Hurler and Scheie Syndromes have deficiency of the same corrective factor (subsequently known as α -L-iduronidase); and (2) the clinical picture of the Sanfilippo Syndrome can be produced by either of two different deficiencies.⁵ Further research on the precise enzymatic nature of corrective factors in the various mucopolysaccharidoses necessitated a reclassification in 1977.³

Three different enzyme deficiencies have been

found in Sanfilippo Syndromes: (1) heparan-N-sulfatase; (2) N-acetyl- α -d-glucosaminidase; and (3) α -glucosaminidase. The clinical manifestations are indistinguishable from one another. The frequency of Sanfilippo Syndrome is not precisely known but is estimated at 1/100,000 to 1/200,000 by Terry and Linker.⁷ Because of the relatively inconspicuous somatic feature, some speculate that Sanfilippo Syndrome may be the most common of the mucopolysaccharidoses.⁸

The differential diagnoses of Sanfilippo Syndrome include the rest of the mucopolysaccharidoses, the mucolipidoses and related disorders, and sphingolipidoses.⁵ The clinical features of mucolipidoses resemble those of mucopolysaccharidoses; however, mucopolysacchariduria is not found. The mucolipidoses and related disorders include lipomucopolysaccharidosis (ML I), I-cell disease (ML II) and pseudo-Hurler polydystrophy (ML III), GM₁ gangliosidosis type I, GM₁ gangliosidosis type 2, fucosidosis, mucosulfatidosis, aspartylglucosaminuria and mannosidosis. Other lysosomal storage disorders — such as Tay-Sachs disease, Fabry's disease, Nieman-Pick disease, metachromatic leukodystrophy, Gaucher's disease and lactosyl ceramidosis — should be considered as differential diagnoses, even though some of their clinical manifestations are quite distinct from MPS.

The diagnosis of the mucopolysaccharidosis (Table II) can be made by family history, developmental history, physical examination, radiologic examination and the batteries of laboratory examinations, including the skin fibroblast study. Physical examination should include complete cardiac examination and thorough eye examination with ophthalmoscope and slit lamp, in addition to the routine physical examination. In young children, corneal clouding can be missed without slit lamp examination. Specific fundi finding — such as cherry red spot and chorioretinitis — are helpful for differential diagnosis. Valvular heart disease is found in some of the mucopolysaccharidoses.

Radiologic study should cover examination of skull, chest, vertebrae, long bones, hands, and feet. Broad and spatulate ribs, thick calvaria, clawhand deformity, kyphosis with gibbus formation, beaking of lumbar vertebrae, broad and stubby fingers, hypoplastic terminal phalanges, and irregularity of the acetabulum are the examples of significant radiologic findings in mucopolysaccharidoses.⁹

Metachromatic spot tests using toluidine blue, acid albumin turbidity test, and cetyl trimethylammonium bromide turbidity test have been widely utilized to detect excessive acid mucopolysac-

TABLE II
SUGGESTED WORK-UP FOR
MUCOPOLYSACCHARIDOSES

1. Family history and developmental history
2. Physical examination
3. Complete cardiac examination including echocardiogram
4. Complete eye examination including slit lamp examination
5. Radiologic examination
6. Laboratory investigations
 - A. MPS screen in urine
 - B. Blood cell smear (Reilly bodies and metachromatic granules)
 - C. Skin fibroblast studies
 1. S₃₅ incorporation
 2. Mixing experiment with known MPS cells
 3. Enzyme assay

charides in the urine. Since each of these tests yield false negative or false positive results on occasion, it is recommended that more than one urine sample be tested; it is also useful to utilize more than one procedure.¹⁰

Blood smear study can be useful since Reilly demonstrated metachromatic granules in circulating polymorphonuclear leukocytes and in bone marrow (Reilly Bodies). The metachromatic granules in the cytoplasm of lymphocyte can be demonstrated in MPS I, MPS II and MPS III, following staining with toluidine blue after methyl alcohol fixation.⁵

The definite diagnosis requires skin fibroblast studies. Skin for tissue culture can be obtained by punch biopsy. Sulfate (S₃₅) incorporation in cultured skin fibroblasts is measured as a first step. If positive, the corrective factor can be demonstrated by mixing fibroblasts from different types of patients whose diagnoses have been confirmed. Final enzyme studies will confirm the diagnosis of mucopolysaccharidoses. Prenatal diagnosis is now available for mucopolysaccharidoses.

Summary

A case of Sanfilippo Syndrome A is reported with clinical, radiologic, and laboratory findings. The classification of mucopolysaccharidoses, their differential diagnoses, and suggested work-up are discussed.

References

1. McKusick, V. A. *et al.*: The genetic mucopolysaccharidoses. *Medicine* 44:445-483, 1965.
2. McKusick, V. A.: The nosology of the mucopolysaccharidoses. *Am. J. Med.* 47:730-747, 1969.
3. McKusick, V. A.: The William Allan Memorial Award Lecture: Genetic nosology. *Am. J. Hum. Genet.* 30:105-122, 1978.
4. Hers, H. G.: Inborn lysosomal disease. *Gastroenterology* 48:625-633, 1965.
5. McKusick, V. A.: *Heritable Disorders of Connective Tissue*, 4th ed. St. Louis, C. V. Mosby, 1972.
6. Fratantoni, J. C.; Hall, C. W. and Neufeld, E. H.: The defect in Hurler and Hunter Syndromes: II. Deficiency of specific factors involved in mucopolysaccharide degradation. *Proc. Nat. Acad. Sci. USA* 64:360-366, 1969.
7. Terry, K. and Linker, A.: Distinction among four forms of Hurler's Syndrome. *Proc. Soc. Exp. Biol. Med.* 115:394-402, 1964.
8. Gorlin, R. J.; Pindborg, J. J. and Cohen, M. M. Jr.: *Syndromes of the Head and Neck*, Second Edition. New York, McGraw Hill, 1976.
9. Spranger, *et al.*: *Bone Dysplasias*. Philadelphia, Saunders, 1974.
10. Thomas, G. H. and Howell, R. R.: *Selected Screening Tests for Genetic Metabolic Disease*. Chicago, Yearbook Medical Publisher, 1972.

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

Patent Ductus Arteriosus

Surgical Ligation in Premature Infants With Respiratory Distress Syndrome

ALLEN GERBER, M.D.;* SERGIO BUSTAMANTE, M.D.;† and
MEDO MIRZA, M.D.,‡ *Wichita*

RESPIRATORY DISTRESS SYNDROME (RDS) in association with patent ductus arteriosus (PDA) in premature infants is receiving increased attention in the literature.¹⁻³ Recent reports have supported the safety of operation in these critically ill babies.^{2, 4-7} Others have emphasized the relationship of bronchopulmonary dysplasia to the duration and magnitude of the shunt through the ductus arteriosus.⁵ Our approach to a premature infant with severe respiratory distress associated with a patent ductus arteriosus has been intense medical management followed by surgical ligation if there is no prompt improvement in the patient's clinical condition. We hereby present a review of our experience at Wesley Medical Center.

Clinical Material

From July 1975 to September 1978, 17 premature infants required ligation of a patent ductus arteriosus. Birth weights ranged from 800-1680 gms, the average weight being 1138 gms. Gestational age ranged from 27-32 weeks, the average being 29 weeks (*Table I*). All patients had severe RDS. Diagnosis was made on clinical findings typical of a PDA. A systolic murmur was audible in all babies, most often along the left sternal border. The date of onset of the murmurs ranged from two to twelve days, the average being five days. Heart failure was diagnosed clinically by the presence of a hyperdynamic precordium, bounding pulses, increased work of breathing and decreased air entry, and radiographically on chest x-ray by an increased generalized opacity with or without significant car-

Recent studies support the safety of surgical treatment for premature infants suffering from respiratory distress syndrome associated with patent ductus arteriosus. Presented is a review of the records of 17 infants so treated at Wesley Medical Center during a three-year period.

diomegaly. Echocardiography was performed in 13 patients to measure the left atrium to aortic root ratio as evidence of a significant left-to-right shunt. Electrocardiograms were performed and were within normal limits with occasional right ventricular hypertrophy.

All patients received intense medical treatment consisting of restriction of fluid intake and the administration of diuretics and digoxin. Transfusions were given to keep the hemoglobin and hematocrit above 14 gm/100 ml and 41% respectively if within

TABLE I
PREOPERATIVE CLINICAL MATERIAL

Pt	GA	BW	Murmur Onset	Preoperative Complications
M	32	1420	12	
H	29	1120	7	Tension pneumothorax
G	32	1100	UK	
D	32	1160	12	Pulmonary hemorrhage
G	31	1680	4	
B	32	1020	9	
W	28	1230	UK	
C	28	1020	2	
P	29	1400	2	Tension pneumothorax
H	29	1190	3	Pulmonary hemorrhage
S	27	860	6	
B	29	1100	3	
T	27	1020	5	
T	28	1260	1	Pulmonary hemorrhage
B	28	780	7	Pulmonary hemorrhage
B	28	800	13	Pneumothorax
B	30	1190	3	Sepsis
Av.	29	1138	5	

* Surgical Resident, Wesley Medical Center, Wichita.

† Former Assistant Professor of Pediatrics, University of Kansas School of Medicine-Wichita; Former Director of Special Newborn Care, Wesley Medical Center, Wichita.

‡ Clinical Assistant Professor of Pediatrics and Surgery, University of Kansas School of Medicine-Wichita; Assistant Director of Surgical Education, Wesley Medical Center, Wichita.

Address reprint requests to Dr. Mirza, 550 No. Hillside, Wichita, KS 67214.

the first two weeks of life. Oxygen was given as required to maintain a PO₂ between 60-80 mm of mercury. Continuous distending pressure (CDP) was necessary in all patients. Twelve of the 17 patients required the use of the respirator preoperatively for an average of seven days.

Preoperative complications occurred in seven patients, including tension pneumothorax in three, pulmonary hemorrhage in four, and sepsis in one.

Operation

Indications for operation were failure to respond to medical management and deterioration of the patient's clinical condition.

Age at operation ranged from 3-37 days, the average being 13 days. Average weight at operation was 1105 gms. All infants were transferred from the Newborn Intensive Care Unit to the operating room in warm transporters. The ambient room temperature during operation was maintained at approximately 32 C (80 F). Rectal temperatures of the babies were carefully monitored; overhead radiant warmers were used to maintain body temperature while the infants were undraped. The ductus was exposed through a posterior lateral thoracotomy at the fourth intercostal

space. In all cases the ductus arteriosus was nearly equal to or as large as the aorta. The ductus was doubly ligated with 4-0 silk around a transfixing suture of 4-0 silk. Tube thoracostomy drainage was used in all patients and was usually removed on the first postoperative day. There were no deaths directly attributed to the operative procedure. Major postoperative complications occurred in one infant. Paralysis of the left hemidiaphragm occurred which required plication of the diaphragm. In another patient bronchoscopy was required to aspirate mucous plugs that produced right upper lobe collapse.

Results

Abbreviated histories of the 17 patients are presented in *Table II*. Eleven showed steady improvement in pulmonary function and resolution of heart

TABLE II
POSTOPERATIVE CLINICAL MATERIAL

Pt	Age OR	Weight	Postoperative Complications
M	30	1440	Dismissed
H	18	1120	Dismissed
G	18	1020	Sudden infant death
D	19	1140	BPD Dismissed
G	6	1660	Dismissed
B	37	1660	RUL collapse Dismissed
W	7	1130	BPD Dismissed
C	5	920	Dismissed
P	11	1100	Paralysis lt. hemidiaphragm BPD Died 4 m.
H	5	1010	Dismissed
S	20	920	Dismissed
B	4	920	Dismissed
T	6	850	Tension pneumothorax BPD Died
T	12	1160	BPD Dismissed
B	15	880	BPD Dismissed
B	13	870	Sepsis Dismissed
B	3	990	Died —enterocolitis, sepsis
Av.	13	1105	

TABLE III
INDICATIONS FOR OPERATION

Author	Criteria
Lewis	Severe respirator dependent RDS
Nelson	1) L → R shunt 2) Progressive CHF despite medical management 3) Respirator dependent
Rittenhouse	1) Arterial hypoxia 2) Hypercarbia (> 60 mmHg)
Zachman	1) Failure to respond 2) Deterioration
Thibeault	1) Grade II aortogram 2) Deterioration of ABGs 3) Respirator assistance
Neal	1) Severe RDS requiring ventilation 2) Increased pulmonary blood flow
Edmunds	1) Heart failure 2) Deterioration of pulmonary function
Murphy	1) CHF unresponsive to management 2) Deterioration of chest x-ray 3) ↑ pCO ₂ , ↓ pO ₂ 4) ↑ apnea, persistent murmur without improvement
Horsley	Large L → R shunt proved by catheterization
Kilman	No improvement despite medical management
Gay	1) Cessation in improvement of hyaline membrane disease and onset of signs of cardiac decompensation 2) Deterioration of pulmonary function
Siassi	Failure of medical management
Kitterman	Severe heart failure despite medical management

failure. One other patient showed good improvement following bronchoscopy and aspiration of mucous plugs that caused a collapsed right upper lobe. Five patients developed severe bronchopulmonary dysplasia. Two in-hospital deaths occurred. One patient developed severe neonatal enterocolitis and sepsis on the tenth postoperative day after making excellent progress in respiratory and cardiovascular status. Another patient died from severe respiratory insufficiency and bronchopulmonary dysplasia. The length of hospitalization postoperatively of those who survived to be discharged ranged from 25-93 days, the average being 40 days. There were two late deaths, one at four and one at six months of age. The former had severe bronchopulmonary dysplasia; the latter died from sudden infant death syndrome with no evidence of pulmonary or cardiovascular disease at autopsy.

Discussion

In the past decade, it has become well known that functional closure of patent ductus arteriosus may be delayed in premature infants with respiratory distress syndrome.¹ The incidence of patent ductus arteriosus in premature infants appears to be 15-41 per cent.^{2-3.}

⁸⁻¹⁰ Siassi described an inverse relationship between the occurrence of a PDA and gestational age and birth weight.⁸ He further found an 80 per cent spontaneous closure rate in those who survived the neonatal period. Neal *et al.* found a low incidence of patent ductus arteriosus in those with a birth weight less than 1000 gms, reflecting the fact that death often occurs prior to the age at which a PDA is diagnosed.⁹

Selection of patients for operation has been a difficult and controversial area. *Table III* summarizes other authors' indications for operation. We have chosen to operate on the basis of deterioration of the patient's clinical condition (*i.e.*, increasing PaCO₂, decreasing PO₂, and increasing number of apnea and bradycardia episodes) in spite of intense medical management.

Review of the literature reveals a low operative mortality. *Table IV* summarizes other authors' results. Overall, mortality in those patients undergoing surgery is up to 50 per cent, the average being 28 per cent. In Rittenhouse's review, approximately two-thirds of deaths were due to pulmonary complications with bronchopulmonary dysplasia (BPD) and progressive respiratory insufficiency being the most

TABLE IV
REVIEW OF MORBIDITY AND MORTALITY

	#	Mortality			BPD	Morbidity	
		OPERATIVE	HOSPITAL	LATE		OTHER	
Siassi	4	0	1			Enterocolitis	1
Horsley	9	0	4	1	3	Pulmonary complications	3
						Meningitis	1
Kitterman	10	0	1	1	0	Progressive pulmonary disease	1
						Aspiration	1
Gay	34	0	15		9	CNS hemorrhage	2
						DIC	2
Kilman	12	0	2	1	1	Perforation	1
						Aspiration pneumonia	1
Mirza and Gerber	17	0	1	2	5	Enterocolitis with sepsis	1
						Pneumothorax	1
Lewis	10	0	0	2	3	CNS hemorrhage	4
						Pneumothorax	3
Nelson	32	1	12	0	—		
Rittenhouse	11		2	0	1	Aspiration	1
						C-P arrest	1
Zachman	27	0	9		5	Respiratory complications	4
Neal	5	0	2		1	CNS hemorrhage	1
Edmunds	21	0	9	1	3	Respiratory insufficiency	7
						Intracranial hemorrhage	1
						Peritonitis	2
Murphy	10	0	5			Respiratory complications	5

common causes.¹¹ Other causes of death were central nervous system hemorrhage and bowel perforation.

The cause of bronchopulmonary dysplasia is unknown. Lewis noted a striking correlation between the development of bronchopulmonary dysplasia and the duration of the shunt.⁴ Gay *et al.*, in reviewing their experiences in 45 patients, also noted a relationship between a large left-to-right shunting PDA and the development of severe bronchopulmonary dysplasia among premature infants with respiratory distress syndrome requiring mechanical ventilation, particularly if required for four days or longer. Lewis, along with others, found bronchopulmonary dysplasia present at surgery to be associated with high mortality. He also found irreversible pulmonary changes in patients after only two days of large PDAs.⁴

The mechanism of development of bronchopulmonary dysplasia is also unclear. A large left-to-right shunt across a PDA increases pulmonary blood flow. Pulmonary edema may result if heart failure occurs. Reports have indicated that prompt ligation of a large left-to-right PDA may prevent the development of bronchopulmonary dysplasia.^{4,7, 10} The duration and magnitude of flow through the shunt may be related to the size of the ductus arteriosus and the gradient pressure from the systemic to the pulmonary circulation.⁹ With improvement of the RDS and the normal maturation of the pulmonary vascular bed, pulmonary vascular resistance is reduced, causing an increase in the amount of the left-to-right shunt, ultimately resulting in the development of congestive heart failure. Increased pulmonary blood flow causes a decreased pulmonary compliance with increased work of breathing and need for assisted ventilation.

Several reports have suggested that a properly timed ligation in relationship to pulmonary vascular resistance may decrease pulmonary blood flow which in turn may decrease the possibility of developing bronchopulmonary dysplasia.⁵⁻¹⁰

Our results support those of others who have concluded that operative ligation is well tolerated in these critically ill infants. The difficulty lies in deciding the hemodynamic significance of a patent ductus arteriosus and when operation should be considered. No study has yet shown that early operation prevents mortality, but recent reports indicate that surgical ligation of the ductus arteriosus may decrease the development of bronchopulmonary dysplasia and other respiratory complications of long term ventilatory support. Therefore, we feel that in premature infants with respiratory distress syndrome

and patent ductus arteriosus, when there is no prompt response to intensive medical management, surgical intervention is indicated.

Prostaglandins, which are ubiquitous vasoactive substances, have been shown experimentally to prevent the ductus arteriosus from closing. They have been used clinically in patients with pulmonary atresia wherein they improve systemic arterial PO₂ due to an increase in pulmonary blood flow. Prostaglandin inhibitors have been shown to constrict the ductus arteriosus in utero. Studies by Friedman and Heymann of the administration of prostaglandin inhibitors to infants with patent ductus arteriosus have suggested the possibility of pharmacologic closure of the ductus arteriosus. They have reported several cases of renal output decrease or even renal shutdown.^{12, 13} Long term toxicity of prostaglandin inhibitors remains to be determined.

Administration of such agents should be done with caution. No studies have been performed to show their safety and the lack of adverse long term effects. The report of renal failure in several cases is disturbing, and undesirable effects on other organ systems may occur.

The administration of prostaglandin inhibitors should be limited to those infants whose conditions, determined in a carefully designed research protocol, would indicate a high surgical risk. For the remaining cases, surgical ligation appears to be a safe approach in premature infants with RDS associated with PDA unresponsive to medical management.

References

1. Donilowicz, D.; Rudolph, A. M. and Hoffman, J. I.: Delayed closure of ductus arteriosus in premature infants. *Pediatrics* 37:74-78, 1966.
2. Edmunds, L. H. *et al.*: Surgical closure of the ductus arteriosus in premature infants. *Circulation* 48:856-863, 1972.
3. Kitterman, J. A. *et al.*: Patent ductus arteriosus in premature infants. *N. Engl. J. Med.* 287:473-477, 1972.
4. Lewis, C. E. *et al.*: Early surgical intervention in premature infants with respiratory distress and patent ductus arteriosus. *Am. J. Surg.* 128:829-834, 1974.
5. Gay, J. H.: Ligation of the patent ductus arteriosus in premature infants: Report of 45 cases. *J. Pediatr. Surg.* 8:677-683, 1973.
6. Zachman, R. D. *et al.*: Incidence and treatment of the patent ductus arteriosus in the ill premature neonate. *Am. Heart J.* 87:697-703, 1974.
7. Nelson, R. J. *et al.*: Improving the results of ligation of patent ductus arteriosus in male preterm infants. *J. Thorac. Cardiovasc. Surg.* 71:169-178, 1976.
8. Siassi, B. *et al.*: Incidence and clinical features of patent ductus arteriosus in low birth weight infants: A prospective analysis of 150 consecutively born infants. *Pediatrics* 57:347-351, 1976.

(Continued on page 508)

Hydrops Fetalis

A Review of Seven Cases

VICHIEEN LORCH, M.D.; RUSSELL A. NELSON, M.D.; AGNES MEYERS, M.D.;
DIANA CARROLL, R.N.; and EVELYN MIERAU, R.N., Wichita

FETAL HYDROPS associated with erythroblastosis and anemia was reported in 1932 by Diamond *et al.*¹ The clinical association between hydrops fetalis and rhesus immunization was well established. Some other causes of hydrops fetalis have been reported sporadically in the literature.²⁻⁶

This paper reviews seven cases of fetal hydrops admitted to the Newborn Intensive Care Unit at Wesley Medical Center during the past two years. The degree of severity, causes, course, and outcome for these patients is summarized in *Table I*.

All seven cases resulted from causes other than anti-D. This might be attributed to use of Rhogam and improved obstetrical care of the Rh sensitized mother. Treatment included exchange transfusion, diuretics, digitalization, respiratory assistance, and other supportive treatments. The mortality rate in this series was 42.8 per cent (3/7).

Discussion

Since Diamond¹ reported fetal hydrops associated with erythroblastosis and anemia, many different causes have been reported.²⁻⁶

Macaffee⁵ reported blood group incompatibilities

From the Department of Pediatrics, University of Kansas School of Medicine-Wichita.

Address reprint requests to Dr. Lorch, Department of Pediatrics, UKSM-W, 1001 No. Minneapolis, Wichita, KS 67214.

Seven cases of hydrops fetalis admitted to Wesley Medical Center during the past two years are reviewed. All resulted from causes other than anti-D, indicating the importance of accurately establishing the cause.

responsible for 82.3 per cent of fetal hydrops, and all but two cases were caused by rhesus immunization. The rest (17.7%) were due to non-immunological factors. Of the seven cases reported here, only two were caused by immunological factors: one by anti-Kell and the other by anti-E and -c.

In 1966, Driscoll² reviewed the subject in depth. The pathogenesis is thought to be hemolysis, increasing anemia and cardiac failure, with the characteristic manifestations of anasarca, anemia, serous effusion, hepatosplenomegaly, and cardiomegaly. The hydropic fetus with hemolytic disease is accompanied by enlarged placenta, attributable mainly to edema. Driscoll's study suggests that the incidence of fetal hydrops due to anti-D may be decreasing, perhaps attributable to the use of Rhogam and improved prenatal care of the Rh sensitized mother. At the present time, the search for causes other than Rh immunization is essential.

The study by Phibb *et al.*⁶ helped to increase understanding of the cardiopulmonary status of
(Continued on page 520)

TABLE I

Cases	Gestational Age	Birth Weight	Severity	Causes	Outcome
I	36 wk.	2943	Moderate	Anti-Kell	Survived
II	28 wk.	1820	Anasarca	Transverse Sinus-tear	Died
III	32 wk.	2290	Anasarca	Congenital Paroxysmal Tachycardia	Survived
IV	34 wk.	3440	Anasarca	Bilateral Hydrothorax	Survived
V	40 wk.	3220	Mild	Anti E and c	Survived
VI	28 wk.	2460	Anasarca	Recipient	Stillborn
VII	28 wk.	1160	Anasarca	Donor	Died



Current COMMENT

Infective Endocarditis – Recognizing Its Present Appearance and Avoiding Errors in Management

DANIEL R. HINTHORN, M.D.,* *Kansas City, Kansas*

BACTERIAL ENDOCARDITIS holds a fascination for clinicians shared by few other diseases. It always constitutes a disproportionately high percentage of clinical pathologic discussions, grand rounds, and examination questions. Few diseases have changed as much in the last 30 years, both in the clinical syndrome and in therapy and prevention. This paper discusses some newer aspects of the syndrome of infective endocarditis and its medical management.

The term infective endocarditis is more commonly used than bacterial endocarditis, as fungi and even rickettsia (Q fever) are now known to cause endocarditis. Even the terms acute and subacute bacterial endocarditis are no longer appropriate since they indicate the progression of untreated endocarditis. The various forms of the disease are named for the causative agent, *e.g.* *Staphylococcus aureus* endocarditis, or *Streptococcus viridans* endocarditis.

Pathogenesis

There are three sequential steps in the development of infective endocarditis. Initially, endothelial cells lining the heart or covering heart valves are eroded. This results in exposure of the underlying supporting structures which are rich in collagen fibrils. Collagen at the site of the endothelial erosion powerfully stimulates platelets to adhere to themselves. As the adherent platelets contract, they release ADP, causing additional circulating platelets to adhere, thus forming a platelet plug. Fibrin is deposited in the mesh of platelets producing a sterile veg-

etation. If bacteremia follows, organisms may be deposited on the platelet-fibrin vegetation, resulting in infective endocarditis. An additional factor in pathogenesis — agglutinating antibody against common mouth bacteria — was previously thought to enhance the formation of streptococcal endocarditis. However, specific streptococcal antibody is no longer believed to favor endocarditis. Instead, it is now thought to protect against endocarditis. This concept is important because a vaccine against *Streptococcus mutans*, the common organism producing dental caries, is now being considered.

Epidemiology

Endocarditis is found in one patient/1,000 hospital admissions. Certain patients who should be suspected of having infective endocarditis whenever they present with fever, malaise, or a flu-like syndrome include intravenous drug abusers, patients with staphylococcal sepsis or prosthetic valves, and individuals with a previous episode of endocarditis. Patients having *Staphylococcus aureus* bacteremia with no apparent peripheral source for the bacteremia are at risk of developing staphylococcal endocarditis unless the primary focus is identified and drained promptly. Recipients of artificial cardiac valves have a 5 per cent incidence of prosthetic valve endocarditis. Alternatively, certain cardiac and extracardiac defects seldom become infected while others commonly become infected (*Table I*). Antibiotic prophylaxis (see below) should be given to anyone with a lesion that commonly becomes infected.

Microbiology

Streptococcus viridans, the common commensal found in the mouth, has been the most frequent cause

* Associate Professor of Medicine, University of Kansas School of Medicine-Kansas City.

Address reprint requests to Dr. Hinthorn, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

TABLE I
ANATOMIC ALTERATIONS AND THE DEVELOPMENT OF INFECTIVE ENDOCARDITIS
OR INFECTIVE ENDARTERITIS

	<i>Frequently Become Infected</i>	<i>Seldom Become Infected</i>
Cardiac lesions	Insufficiency of mitral or aortic valve (Rheumatic valve disease) Insufficient tricuspid valve Bicuspid aortic valve Small ventricular septal defect Prosthetic heart valves Previous episode of endocarditis	Calcific aortic stenosis Large ventricular septal defect Atrial septal defect Mural thrombi (secondary type) Cardiac pacemakers
Extracardiac lesion	Patent ductus Coarctation of aorta Arteriovenous fistula Traumatic Induced (hemodialysis)	Atheroma Veins Prosthetic arterial grafts Bypass vein grafts
Conditions recently recognized as predisposing to endocarditis	Hypertrophic subaortic stenosis Myxomatous degeneration of mitral valve Cirrhosis of liver Continuous intravenous administration of drugs or nutrition	

of infective endocarditis, but is rivaled by other organisms in patients with certain underlying disorders.

Intravenous drug abusers are likely to be infected with *Staphylococcus aureus* or — less commonly — with pseudomonas, candida, or two organisms simultaneously. Clinical findings of endocarditis may be present, but with negative blood cultures. The sources of the staphylococci are not known, but the same strain of staphylococcus may be carried in the anterior nares. Cultures of drugs and paraphernalia show these items do not harbor the bacteria.

Prosthetic valve endocarditis (PVE) may be of early or late onset. Early onset endocarditis occurs within two months after valve placement; late onset after the two month period. The infecting organism in early onset PVE is more likely to be gram negative bacilli, *S. aureus*, or *S. epidermidis* rather than streptococcus. Pathogens in late onset PVE include *S. viridans* and enterococcus also.

Clinical Features

Fever, changing heart murmur, and positive blood cultures enhance the diagnostic suspicion of infective endocarditis. However, the clinical diagnosis must be suspected when only two of these are found. Other less common peripheral manifestations that aid the diagnosis include petechiae, Roth's spots (fundoscopic hemorrhages with pale centers), Janeway lesions (nontender purple macules on palms or

soles), and Osler nodes (tender nodules on the fingertips). The latter are believed to be due to a hypersensitivity phenomenon, although organisms have been cultured from some Osler nodes. Subungual splinter hemorrhages are not of diagnostic value since they are found normally with insignificant fingernail trauma. Peripheral arterial emboli occur in fungal endocarditis with the large friable vegetations. Even in patients with emboli, fungi may not be isolated from blood, making mandatory a histopathologic study of the embolus to give presumptive identity of the causative agent.

Right-sided staphylococcal endocarditis, associated with staphylococcal pneumonia, pneumatoceles, and air fluid levels has become typical in intravenous drug abusers with tricuspid valve involvement. Alternatively, addicts may have aortic rather than tricuspid valve infected without the pulmonary findings.

Laboratory Findings

Anemia, leukocytosis, and hematuria are associated with endocarditis, but diagnostically are not specific.

Bacteremia is the single most important diagnostic finding in endocarditis (*Table II*). Culture negative endocarditis is unusual, but no organism may be found in these five clinical settings: (1) following previous antibiotic therapy (add penicillinase to cultures if penicillin was used); (2) in fungal endocarditis typically on prosthetic valves or in addicts

TABLE II
LABORATORY STUDIES USEFUL IN THE DIAGNOSIS
OF INFECTIVE ENDOCARDITIS

Blood cultures (special techniques may be needed for fastidious organisms)
Rheumatoid factor (positive in one-half of patients, titer decreases with therapy)
Echocardiography (useful for vegetations larger than 2 mm)
Circulating immune complexes (non-specific, related to duration of infection, decrease with therapy)
Teichoic acid antibodies (found in staphylococcal disease, but not specific for endocarditis)

TABLE III
PRINCIPLES OF THERAPY OF INFECTIVE
ENDOCARDITIS

Isolate causative agent, if culture negative, treat for enterococcal endocarditis
Select a bactericidal antibiotic
Adjust dose and interval by serum inhibitory titers
Identify and drain additional infected sites
Determine hemodynamic significance of lesions
Detect complications of disease or therapy
Educate patient in need for antibiotic prophylaxis after cure of present episode

(aspergillus or candida); (3) in infections involving very fastidious organisms requiring special nutrients; (4) when low numbers of organisms are circulating; or (5) when insufficient volumes of blood are cultured. Apparently negative cultures in bacteremia may be caused by laboratory culture techniques. Anaerobic bacteria may be missed by cultures that are not really anaerobic. *Candida* or *pseudomonas* grow poorly, if at all, in anaerobic environments.

Continuous bacteremia characterizes culture positive endocarditis. If one blood culture is positive in endocarditis, all other blood cultures are likely to be positive. One series of 696 blood cultures in endocarditis showed 663 positive cultures. In contrast, intermittent bacteremia is typical of patients with an extravascular focus of infection. When endocarditis is suspected, one should obtain three or four blood cultures over a period of at least one hour by separate venipunctures at different sites before therapy is started. Even in presumptive staphylococcal endocarditis (addicts, prosthetic valves, changing murmurs), therapy can be delayed one hour to obtain appropriate information. In less fulminant endocarditis, therapy may be delayed even longer.

Therapy

Optimal therapy of infective endocarditis demands use of a bactericidal antibiotic chosen by susceptibility testing of blood isolate (Table III). Blood cultures may remain negative for patients having a high risk of staphylococcus endocarditis who have been partially treated prior to blood cultures. Such patients should have therapy completed with an antistaphylococcal agent such as nafcillin. Other culture negative endocarditis should be treated with penicillin and gentamicin or streptomycin for enterococcal endocarditis.

Demonstration of adequate serum levels of antibiotic during therapy for endocarditis is termed serum

dilution testing or serum inhibitory testing. These serum inhibition tests should be performed at least weekly during therapy, and should show that the bactericidal activity against the organism isolated from the patient's blood is 1:4 or 1:8 immediately prior to antibiotic dosing. Weekly blood cultures should also be obtained during therapy to search for inadequate therapy, development of resistance, or infection with more than one organism.

Several recent developments have been suggested in management of infective endocarditis. For *Streptococcus viridans* endocarditis, penicillin G alone has been the drug of choice. Recent studies have shown that penicillin alone for four weeks results in cure for 95 per cent of patients with streptococcal endocarditis, while the combination of penicillin for four weeks and streptomycin for two weeks gave cure in 100 per cent of cases.

The standard therapy for enterococcus (*Streptococcus faecalis*, streptococcus, group D) has been penicillin in combination with streptomycin, because penicillin alone is not bactericidal. The combination of penicillin plus streptomycin will be synergistic against the enterococcus if it is not highly resistant ($< 2000 \mu\text{g/ml}$). One-third of enterococci is highly resistant to streptomycin. Alternatively, gentamicin plus penicillin may result in a synergistic bactericidal combination against virtually all enterococci, except enterococci highly resistant ($> 200 \mu\text{g/ml}$) to gentamicin. Some now suggest that enterococcal endocarditis should be treated routinely with penicillin and gentamicin. Penicillin-allergic patients may be treated with vancomycin plus gentamicin.

Staphylococcus aureus endocarditis is treated with a single semisynthetic penicillin, nafcillin, or oxacillin. Case reports and animal studies suggest adding gentamicin to enhance cure. At present, no objective data recommend this combination routinely in patients.

TABLE IV
GUIDELINES FOR PREVENTING ENDOCARDITIS

Procedure	Most Likely Pathogen	Antimicrobial
Dental procedures which may result in bleeding or Surgery or instrumentation of the respiratory tract	<i>Streptococcus viridans</i>	Aqueous penicillin G (1 million units IM) mixed with procaine penicillin G (600,000 U IM) given 0.5 to 1 hr before procedure. —Follow with penicillin V 500 mg every 6 h for 8 doses (2 days) <i>Alternate prophylaxis:</i> Penicillin V (2.0 gm orally) 0.5 to 1 hr before procedure. —Follow with 500 mg every 6 h for 8 doses (2 days). <i>Patients allergic to penicillin:</i> Erythromycin (1.0 gm orally) 1.5 to 2 h prior to procedure. —Follow with 500 mg every 6 h for 8 doses (2 days).
Dental or respiratory in patients with prosthetic cardiac valves		Aqueous penicillin G (1 million units IM) mixed with procaine penicillin G (600,000 units IM). PLUS Streptomycin (1 gm IM) —Follow with penicillin V 500 mg orally every 6 h for 8 doses (2 days). <i>Penicillin allergic patients:</i> Vancomycin (1 gm IV over 30 min to 1 h). Begin infusion 0.5 to 1 hr before procedure. —Follow with erythromycin 500 mg orally every 6 hr for 8 doses (2 days).
Gastrointestinal or genitourinary tract instrumentation	Enterococci	Aqueous penicillin G 2.0 million units IV OR Ampicillin 1.0 gm IM or IV PLUS Gentamicin 1.5 mg/kg IM or IV (max dose 80 mg) OR Streptomycin 1.0 gm IM All given 0.5 h before procedure. —Follow with gentamicin or ampicillin same dose every 8 h for two doses, or with streptomycin and penicillin same dose every 12 h for two doses.

Prophylaxis

Revised guidelines for preventing infective endocarditis are shown in *Table IV*. Prophylaxis is suggested for patients with the lesions in *Table I* most likely to result in infective endocarditis. No controlled clinical trials support these guidelines, proposed by a selected panel of experts for the American Heart Association. In determining the therapeutic regimen of choice, the antibiotic suggested is expected to be effective against the

usual pathogen producing bacteremia after the specified traumatic event.

Medical progress has changed the picture of infective endocarditis, yet it continues to be associated with a 30 per cent mortality despite apparently appropriate therapy. This mortality is related to our inability to eradicate certain unusual organisms and to occasional lethal complications of the disease. Nevertheless, a disease uniformly fatal a half-century ago can now be cured in most patients, and prevented in certain others. Can we expect as much progress during the next half-century?

Self Assessment Questions

1. Which of the following antimicrobials is unlikely to effect a bacterial cure in enterococcal (streptococcus, group D) endocarditis?
 - a. Ampicillin, 2 gm intravenously every 4 hours for 4-6 weeks.
 - b. Penicillin G, 2 million units every 3 hours, plus gentamicin, 80 mg every 8 hours for 4-6 weeks.
 - c. Cephalothin, 2 gm intravenously every 4 hours for 4-6 weeks.
 - d. Vancomycin, 0.5 mg every 6 hours for 4-6 weeks.
2. Which of the following organisms should be expected to be causing infection in a patient who develops endocarditis four months after replacement of aortic valve for rheumatic aortic insufficiency?
 - a. *Streptococcus viridans*
 - b. *Candida albicans*
 - c. *Staphylococcus epidermidis*
 - d. *Aspergillus fumigatus*
 - e. All of these
3. The patient referred to in question 2 above has six blood cultures, all of which are sterile after three days. He remains febrile, has clinical findings of endocarditis. Nafcillin, 1.0 gram every 4 hours, is begun and five days later he complains of pain in the left leg. Pulses are diminished and the leg is cool. What organism in question 2 above is now most likely?
4. The causative agent would be best established by which of the following?
 - a. Gram stain of buffy coat.
 - b. Embolectomy with culture and microscopy of specimen.
 - c. Serum precipitins.
 - d. Culture of blood on Saboraud's agar.
5. Which of the following antibiotic regimens is not likely to give effective drug levels for endocarditis prophylaxis associated with dental manipulation?
 - a. Benzathine penicillin, 2.4 million units 1 hour before procedure.
 - b. Penicillin V, 2 gm 1 hour before procedure and every 6 hours for 2 days.
 - c. Erythromycin, 1 gm orally 2 hours before procedure and every 6 hours for 2 days.

(Answers on page 520)

Bowel Preparations

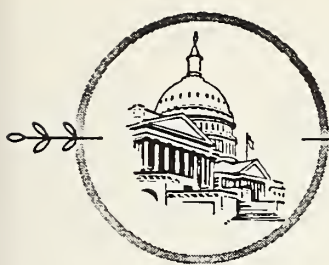
(Continued from page 493)

7. Nichols, R. L. and Condon, R. E.: Antibiotic preparation of the colon: Failure of commonly used regimens. *Surg. Clin. North Am.* 51:223, 1971.
8. Nichols, R. L. and Condon, R. E.: Preoperative preparation of the colon. *Surg. Gynecol. Obstet.* 132:323, 1971.
9. Nichols, R. L. et al.: Efficacy of preoperative antimicrobial preparation of the bowel. *Ann. Surg.* 176:227, 1972.
10. Herter, F. P.: Preparation of the bowel for surgery. *Surg. Clin. North Am.* 52:859, 1972.
11. Saunders, W. E. Jr.: The aminoglycosides: Streptomycin, kanamycin, neomycin and paromycin. *Antimicrobial Therapy*, 2nd Ed, (Kagan, B. M., Ed.). Philadelphia W. B. Saunders, p. 35, 1974.
12. Nichols, R. L.; Gorbach, S. L. and Condon, R. E.: Alteration of intestinal microflora following preoperative mechanical preparation of the colon. *Dis. Colon Rectum* 14:123, 1971.
13. Riddell, M. I.: A review of the literature on preoperative prophylaxis of the bowel with antibacterial agents. *Am. J. Med. Sci.* 223:301, 1952.
14. Nobles, E. R. Jr.: Bacteroides infection. *Ann. Surg.* 177:601, 1973.

Patent Ductus Arteriosus

(Continued from page 502)

9. Neal, W. A. et al.: Patent ductus arteriosus complicating respiratory distress syndrome. *J. Pediatr.* 86:127-132, 1975.
10. Horsley, B. L. et al.: Respiratory distress from patent ductus arteriosus in the premature newborn. *Ann. Surg.* 177:806-810, 1973.
11. Rittenhouse, E. A. et al.: Patent ductus arteriosus in premature infants. *J. Thorac. Cardiovasc. Surg.* 71:187-194, 1976.
12. Friedman, W. F. et al.: Pharmacologic closure of patent ductus arteriosus in the premature infant. *N. Engl. J. Med.* 195:526-529, 1976.
13. Heymann, M. A. et al.: Closure of the ductus arteriosus in premature infants by inhibition of prostaglandin synthesis. *N. Engl. J. Med.* 195:530-533, 1976.
14. Thibeault, D. W. et al.: Patent ductus arteriosus complicating the respiratory distress syndrome in preterm infants. *J. Pediatr.* 86:120-126, 1975.



Socio- ECONOMICS

Telephone Answering Solutions

Ed Note: This is the 16th in the series of articles prepared by the AMA Department of Practice Management, Division of Medical Practice. For other articles on this topic, see the following issues: November and December 1977, and January, February, March, July, September, November, and December, 1978 and January, February, March, May, June, and July 1979.

The subject of practice management has become more critical in recent years. To assist the physician in a smoother operation of his office, the Department has produced workshops for medical assistants dealing with such aspects as collections, public relations-telephone techniques and office management, as well as practice management workshops for the new physicians. The Kansas Medical Society Executive Office will present such workshops upon demand by members.

At almost ever workshop dealing with telephone techniques conducted jointly by the Kansas Medical Society and the AMA Department of Practice Management, the question has been asked, "How many telephone lines should our office have?"

It is a good question and can be answered quite specifically, regardless of the specialty of the physician or practice set-up. The answer, however, requires an explanation of the "busy signal survey."

Busy Signal Survey

To measure the number of times that calls to your office get a busy signal and do not get through, a survey can be made by the telephone company (in most areas at no charge) by attaching a device to your incoming lines which automatically counts the number of calls that met with a busy signal. At the end of a week, two weeks or a time period that appropriately represents your practice, the telephone company will give your office a report detailing the results.

If more than 20 per cent of callers receive a busy signal, a combination of more incoming or outgoing lines may be indicated. (To add incoming lines meaningfully would include the addition of person-

nel to answer the phone, or a reorganizing of present staff duties to assist the main receptionist.)

One reason for busy lines is that staff members may be using incoming lines to make necessary business calls — to schedule surgery, admit patients, call about overdue accounts, or return patient calls. Such a situation may be solved by simply adding a line for outgoing calls only.

Also, when expanding the practice by adding physicians or allied health personnel, more lines, not merely extensions, will be needed to accommodate the additional call load.

Peak Load Survey

Along with the busy signal survey, you may want to consider a *peak load survey*. This, too, is made by the telephone company with a device that automatically counts the incoming and outgoing calls, and records the days, and the time of day, when the number of calls is heaviest. Using this data, certain jobs in the office may be re-scheduled to be performed at non-peak load times. For example, on Monday mornings when the phone literally rings off the hook, perhaps an additional staff member could be assigned to help with telephone answering. A part-time person, to assist the receptionist during these especially hectic times, may be in order.

Starset

The medical assistant responsible for most of the telephone work can further be helped by the use of a STARSET. This is an extremely light weight headset originally developed for the astronauts. Weighing about an ounce, it does not have to be held by a band over the top of the head — which many Medical Assistants find objectionable. A tiny receiver hooks on the ear and the operator talks into a very slender, plastic tube, about half the diameter of a pencil, that curves down from the ear piece to within a couple inches of the mouth.

Using the STARSET (this is a trade name; similar equipment may also be referred to as simply a feather weight headset) the telephone assistant has both hands free during the telephone conversation. The device can also be secured with a coiled extension cord that hangs back of the operator to enable her to move about, perhaps get up and go over to the file, while still carrying on a conversation with the patient. This is considerably more advantageous for both the caller and the telephone assistant than having to put the caller on "hold," lay the receiver on the desk, go to the file for the information required, then return to her desk, pick up the receiver and connect with the caller again.

In investigating a STARSET for the office, the telephone assistant should be included in the process or assigned the job exclusively. If she makes, or shares in the decision to get this equipment, she will be happier with it than if one is simply delivered to her telephone station.

The STARSET plugs into a standard desk phone that is equipped with a special jack. The phone can be used in the regular manner when the telephone load is light. The head-set does not have to be used all of the time, but is available immediately when needed.

The telephone company will give a demonstration. There is a monthly charge for the unit, which varies in different localities, and a one-time installation charge for the plug-in jack.

Convenience Telephone

When reviewing telephone equipment needs for the office, consider the possibility of providing a phone in the reception room for your patients. Patients at times need to make a quick call — *most often because they have had to wait longer than anticipated*. Providing a phone for patient's use is a service to them and a help to the staff. A wall-mounted, single-line phone, with no chair near-by, in view of the front office staff can be installed with local prefixes only, so that long distance calls cannot be made. No number is shown on the phone, thus preventing patients from calling it and your Medical Assistant having to answer it. A small card at the phone listing the telephone numbers for taxi and bus service is a real help to patients who must depend on public transportation. It also saves the receptionist's time in looking up this information for patients.

The alternative of letting patients use the receptionist's telephone for outgoing calls has a number of serious disadvantages. Here are just a few:

1. It can tie up a line and result in a busy signal for someone calling in.

2. The work area has many records that are confidential, such as medical charts, financial card, hospital and laboratory reports, etc. These should not be seen by any but authorized personnel. People are curious by nature and the opportunity to look is too much for some to resist.

3. Prescription pads are often on desk tops and in various work areas. These might be picked up by some patients while using the telephone in a work area. This is a very real and current problem. One way of obtaining drugs is by forgery, and stolen prescription pads play a part in this scheme.

4. Cash received from patients for office services is usually kept in a drawer easily accessible to anyone using the phone behind the desk. It could be a temptation for some patients and should be avoided.

5. Your Medical Assistant's time is valuable. When patients use her phone, she may have to run to another to answer an incoming call or to make a necessary outgoing call. This can happen when she hands the phone over the counter, and the situation is even more damaging if the caller has to usurp her work space.

The additional alternative of simply sending the patient out of the office to make a phone call also has some serious shortcomings. The patient who needs to make a call because he/she has been kept waiting too long is not in the best of moods. If such a patient has to go to a nearby pay phone, perhaps in the corner drugstore, make the call and then return to the reception office to continue to wait, the irritation is greatly compounded.

**Letters to VOX DOX should be
addressed to the Vox Dox Editor,
Journal of the Kansas Medical
Society, 1300 Topeka Avenue,
Topeka, Kansas 66612.**

Corporate Disability Benefits

THE STRUCTURING of a disability income protection program can be very confusing to the newly incorporated professional. Questions often raised are: How much should I own? What types of coverage should I purchase? What benefits should I include in my program? This article will attempt to answer these questions.

Level of Benefit

Most financial planners recommend that a professional ensure 70 per cent of his/her income. The incorporated professional should take special care when establishing a disability income protection program to ensure that the company writing the coverage will include not only the salary the professional receives from the corporation but also any monies used for benefits and retained in the corporation.

Types of Programs

The incorporated professional will be faced with the decision either to purchase an individual policy through a private carrier or to participate in one of the many groups available to physicians. Some firms recommend that both types of coverage be purchased. Generally, a professional should acquire the maximum benefit allowed (normally \$3,000 to \$4,000/month) from a private carrier and supplement this benefit with additional coverage purchased through a group program. Combining these two types of coverage will allow most individuals to secure the maximum level of benefit at a reasonable cost.

Supplemental Benefits

It is critically important that any coverage purchased contain a residual disability benefit clause and an occupational disability benefit clause. The residual disability benefit clause will allow the disabled professional to return to practice and earn income without forfeiting all disability benefits. Simply stated, if he were earning \$100,000/year prior to disability and had purchased a \$50,000 disability benefit plan, he would be able to return to practice on a part-time basis and build up the level of income before losing all benefits (*i.e.*, if he returns to practice on a part-time basis and begins earning \$50,000/year, disability benefits would be reduced only by the percentage of income then being received).

EXAMPLE

<i>Income Prior to Disability</i>	<i>Income After Disability</i>	<i>Per Cent</i>
\$100,000	\$50,000	50
<i>Benefit Level</i>		
\$50,000	\$25,000	50

It is essential that the term "occupational disability" be specifically defined within a program. Many companies define disability as "the inability to perform any gainful occupation." By definition this can often result in the physician losing all benefits simply because he is technically capable of performing some other occupation. Coverage purchased should always include a definition of total disability to mean "the insured is unable to engage in his/her regular occupation." Generally, these benefits can be purchased for a nominal additional charge.

Great care should be taken when establishing a disability benefit program, because the discovery of an error usually occurs when it is too late to correct it, and in some cases has resulted in the loss of hundreds of thousands of dollars in benefits.

Further information may be obtained from Midwest Pension Planners, Mr. John E. Lyons, Plan Consultant, 1010 Merchants National Bank Bldg., Topeka, KS 66612.

Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

The President's Message

Professional organizations have always attempted to represent their membership. Each profession has such organizations. In some instances the organization is a single organization for the entire membership. Other professions are splintered and have several different organizations to represent them. The non-professional vocations frequently also have organizations to represent them. This may take the form of a union, if it is primarily a labor group, or a voluntary organization with other groups such as farmers and teachers. In a democratic society all these organizations *should* represent their membership.

American medicine is replete with organizations striving to represent physicians. Each specialty has its own organization. There is some strength in the union movement in some medical circles, especially where physicians are salaried. The AAPS represents those physicians who are of a conservative bent and join that organization. In addition we have our local and state medical societies and — on the national level — the AMA. It has been argued that the AMA does not represent the rank-and-file practicing physician. It has been said that the AMA does not represent the physicians who are engaged in full-time teaching. There are those who feel that the AMA does not represent physicians who are working in a public health type of practice.

Having just returned from the annual AMA business meeting in Chicago, I am impressed by the tremendous amount of effort the AMA is expending in defending certain suits by chiropractors. I am impressed by the tremendous amount of energy the AMA is expending in trying to defend physicians against encroachment of their medical practice by the FTC. I am impressed by the amount of lobbying and other efforts we are making in regard to having a part in national health care legislation, and I am impressed by the large number of other issues being met daily at the national level by the AMA.

The AMA's Board of Trustees carries out the policies of the AMA. These policies are formulated by the AMA House of Delegates which represents

each state medical society and each specialty society. The House of Delegates is an extremely democratic organization. After resolutions are submitted, they are subjected to a hearing before a reference committee. Any member of the AMA can testify before that reference committee; you don't have to be an AMA delegate or a state officer. The reference committee then makes its report to the full House of Delegates where the resolution is voted upon. Occasionally, dramatic changes in policy do occur, as evidenced by Resolution 62 in 1978, when the stance on national health insurance was notably changed by action of the House of Delegates.

In short, the AMA *does* represent its members — that is, those members who choose to participate. You *can* be represented through your delegates to the AMA House of Delegates or by personal participation at the reference committees. Your opinion will be heard! The AMA *does* speak for its members. If you are not in agreement with AMA policies, I would urge you to make your opinions known.

The increasing intervention of the federal government into the health care field will result in increasing efforts of the federal government to contact the medical profession for advice and assistance in formulating federal health programs and in the carrying out of any health care legislation. It is apparent that the AMA will be the organization they will look to for this information, because only the AMA speaks for *all* physicians in this country. If you want to have a voice in these decisions, I urge you to join the AMA and participate in the AMA policy-making sessions. If you are not a member it is certainly easy to say, "They don't represent me." But if you aren't a member of the AMA, who is representing *you* on the national scene?

Fraternally



President



Addendum

The July issue of the *Journal* carried a comprehensive and thoroughly documented study of professional advertising (as you really shouldn't need to be told) by Howard Ward, one of that growing band of medico-legal hybrids. His presentation was exemplary except for one gaffe. In citing as an example of blatantly objectionable advertising the activities of that outstanding alumnus of the Kansas City Eclectic Medical College, John Brinkley, he refers to the matter as "still within the memory of some living Kansans."

Well, now, just a daggoned minute.

Just because this young whippersnapper wasn't even around at that time, he doesn't need to act as if those of us who were are necessarily fugitives from the state historical museum (though admittedly we might benefit from Dr. Brinkley's professional attentions). We happen to have had a certain degree of contact with the affair including attendance at a couple of the hearings when the State Board of Medical Registration and Examination was attempting to defrock Dr. Brinkley. Those sessions were held on the mezzanine of the old Kansan Hotel in Topeka, in that warm summer of 1930, when we would have been happy to set the thermostats at 78 degrees if there had been any thermostats to set. We were working as errand boy at a nearby pharmacy, and one of our duties was to stop in from time to time and report the progress of events. However, there were, during our visits, none of the fireworks reported at other times in that prolonged effort, and the process seemed rather dull at the time but this may have been due to our youth which can certainly be described as callow. We didn't really associate the vigorous fanning and clucking of the strongly pro-Brinkley audience with history in the making.

The other element of our association with the Brinkley affair, however, lay in the fact that Dad was one of the members of the Board at that time, and consequently shared with his colleagues a fair

amount of flak that was directed toward the orthodox medical profession in general and the Board in particular. There were no physical threats or violent confrontations that we recall, but the recorded descriptions of the man's popular appeal, which now seem almost to be fabricated, were quite true and a considerable segment of the press offered him its support. The degree of effort necessary to lift his license and his subsequent political activities testify to his hold on the public, and remind us that there is probably no more constant single expression of human behavior than this adherence to the charlatans and nostrums.

Now, it happens that Dad's father came to Kansas as a young man from Liverpool, Nova Scotia. He went to work for the Santa Fe and here we are. His migration was voluntary — no coercion by the authorities or clouded past as far as we know. He was a genial and gentle man but, aside from a few verbal anecdotes, made no effort to record any details of his background with the result that his death left numerous gaps in the family history.

Consequently, one summer late in the '30s, Dad decided that the family vacation would consist of a motor trip through Canada culminating in a visit to Liverpool, where we would look into the family closet. This was a fairly formidable trip in those days when motels existed only in their primordial form called cabin camps, and were rare at that. Nevertheless, with the help of a new four-door Chevy at \$925 (complete with built-in trunk — not one that strapped on a rack at the rear), we pursued the full tourist bit — including a visit to Callander to see the quints.

We finally reached our destination one late afternoon. Liverpool is a pretty little town a short way up from the mouth of the Mersey River on the east coast of Nova Scotia. You come into town — or did then — on a tree-covered street that curves up to meet the bridge over the river. As you come on the bridge, you get a panoramic view of the docks and town. On

this particular occasion, the view included, at dockside, a huge, beautiful yacht that J. P. Morgan must have had in mind when he made his famous remark about ownership. As we got close enough to the prow, we could see the name emblazoned thereon: "The Dr. Brinkley."

Dad had a fair stock of expletives on hand for occasional use, but he also had a well-developed sense of humor, and the sight fortunately brought forth one of his characteristic guffaws. We were well aware that Dr. Brinkley's fortunes hadn't diminished after he left Kansas but hadn't really kept that close track of him, so we were somewhat puzzled about the situation. The explanation came shortly when we checked in at a tourist home and found on the table in the parlor a copy of the latest edition of the local weekly paper with a banner headline: "WELCOME, DR. BRINKLEY, THRICE WELCOME." A sub-head extended similar felicitations to Mrs. B. and Johnny Boy, and a couple of columns of text described the Liverpoolians' unbounded joy at seeing the Brinkley party again. At a subsequent visit with

the editor of the paper, Dad learned that the Brinkleys came to Liverpool each year with a sizable entourage and he was able to confirm that the journalistic hyperbole was considered small exchange for the boost to the town's economy.

We didn't meet up with any of the group but the genealogic exercise was something of an anticlimax after that. We didn't get much new information anyway — no unclaimed fortunes or forgotten noble titles — but then no bars sinister either. In fact, the unanticipated success of the visit lay in the fact that Dad was able to procure copies of the paper which he forwarded with appropriate comment to each of his former colleagues on the Board.

So this obviously personalized footnote is added partly to demonstrate the brilliant clarity of our memory (for distant events, anyway) and also to record it before the censorship of senility sets in. But mainly we want to stress the fundamental point which Dr. Ward's article, for all its erudition, did no more than imply.

It pays to advertise. — D. E. G.

THE UNIVERSITY OF KANSAS COLLEGE OF HEALTH SCIENCES AND HOSPITAL

DIVISION OF HEALTH CARE OUTREACH AND CONTINUING EDUCATION

SYMPOSIUM: INTERNAL MEDICINE — October 17, 18 and 19, 1979

Guest Faculty:

GEORGE W. HAMBRICK, JR., M.D., University of Cincinnati College of Medicine, Ohio.

JOHN P. HAYSLETT, M.D., Yale University School of Medicine, New Haven, Connecticut.

LEONARD D. HUDSON, M.D., Harborview Medical Center, Seattle, Washington.

ALEX S. D. SPIERS, M.D., Ph.D., Boston University Medical Center, Massachusetts.

ELLIOT WESER, M.D., The University of Texas Health Science Center at San Antonio and Audie L. Murphy Memorial Veterans Hospital, Texas.

Subjects to be discussed will include: CHRONIC OXYGEN THERAPY; POTASSIUM BALANCE; CLINICAL MANAGEMENT OF HYPER AND HYPOKALEMIA; PVC's — "DO YOU TREAT OR NOT TO TREAT?"; NEW ANTIHYPERTENSIVE DRUGS; PHOTODIAGNOSIS; CUTANEOUS SIGNS OF INTERNAL ILLNESS; OVERVIEW OF TREATABLE MALIGNANCIES; CHRONIC GRANULOCYTIC LEUKEMIA; PATHOPHYSIOLOGY OF DIARRHEAL DISORDERS.

Accreditation:

American Medical Association: 21½ hours of Category I.

American Academy of Family Physicians: 21½ prescribed hours.

Registration Fee: \$150.00.

MEDICINE AND RELIGION — October 23 and 24, 1979

Guest Faculty:

L. ARDEN ALMQUIST, M.D., M.Div., Baptist Memorial Hospital, Kansas City, Missouri.

REVEREND DONALD C. BAKELY, B.S.E., M.D., Cross-Lines Cooperative Council, Inc., Kansas City, Kansas.

WILLIAM H. DEGE, M.D., Center for Disease Control, Department of Health, Education and Welfare, Atlanta, Georgia.

FATHER PHILIP E. KENDALL, C.S.V., J.C.D., Member of Clerics of St. Viator and Archdiocese of Kansas City, Kansas.

SISTER ROSE CARMEL McKENNA, A.B., M.S., M.Ed., Providence-St. Margaret Health Center, Kansas City, Kansas.

MERRIS B. MARGOLIES, Ph.D., Beth Shalom Congregation, Kansas City, Missouri.

DONNA L. DSNES, R.N., B.S., M.S., Shawnee Mission Public Schools, Kansas.

WALLACE B. SMITH, M.D., Reorganized Church of Jesus Christ of Latter Day Saints and Board of Trustees, Independence Sanitarium and Hospital, Missouri.

CHARLES B. WHEELER, M.D., J.D., Wheeler Medical Laboratories, Inc., Kansas City, Missouri.

Subjects to be discussed will include: LIMITATIONS OF MEDICAL INTERVENTION; THE RESPONSIBILITY OF SOCIETY FOR THE INDIVIDUAL'S HEALTH (NOT ILLNESS CARE!); THE INDIVIDUAL'S RESPONSIBILITY FOR ONE'S OWN WELL BEING (HEALTH); THE PROBLEMS OF DEFINING HEALTH, VIRTUE, SICKNESS AND SIN; ALTERNATIVES AND SOLUTIONS.

THE FORMAT AND METHODOLOGY TO BE EMPLOYED BY THIS PROGRAM WILL BE DEBATED ON ISSUES RELATING TO PHYSICAL AND SPIRITUAL QUESTIONS WITH GROUP DISCUSSION, LECTURES, AND AUDIOVISUAL AIDS.

Accreditation:

American Medical Association: 13 hours of Category I.

American Academy of Family Physicians: 13 prescribed hours.

Kansas Social Work Licensing: 12 hours.

Kansas State Board of Nursing: 13 contact hours.

Registration Fee: \$60.00.

For program announcement and information, write: DIVISION OF HEALTH CARE OUTREACH AND CONTINUING EDUCATION, University of Kansas College of Health Sciences and Hospital, Kansas City, Kansas 66103.



THE NATURE OF DEATH, Maurice Natanson, Editor. *The Journal of Medicine and Philosophy* 3:1-67, March 1978. University of Chicago Press, Chicago. \$15.00.

Ask almost anyone about death and they may say it has occurred prior to the time the doctor makes the pronouncement, the church provides a funeral rite for the departed, or society allows the family to bury or dispose of the remains. This says that the doctor, the clergyman, or other person must draw upon criteria not covered in these prescriptions such as corporal decomposition, rigor mortis, failure of vital organs, disappearance of heart function, or the cessation of breathing. In times past when epidemics nurtured panic, self-preservation made the determination of death more realistic and much less moralistic. On the other hand, advances in medical management that include cardiopulmonary resuscitation and organ transplants has sustained fears that pronouncements of death may occur untimely and subserve ungodly or selfish ends. Such ends need only remain suspect; no one need prove they exist.

Despite this, medical advances have stretched useful life out of hopeless disease, experts have

come to recognize a point where further treatment produces no effect and death is inevitable, and only the unknowing or imprudent would continue treatment. In fact, those motivated by humanistic principles in the management of disability arising from disease now find they must manage death if pain and horror is to be relieved. Yet, herein resides a troublesome question; does management lengthen death or shorten life — does it subserve the welfare of the dying or violate the laws of God?

Man has solved many vexing problems through the pursuit of understanding. For this purpose he has structured a variety of methods, terms, classifications, and abstractions that facilitate analysis. Since philosophy concerns itself with the nature, validity and values inherent in such structures, it is only natural that philosophy should inquire not only about the nature of death but whether medicine's views on death stand the test of argumentative reasoning. The contributors mean by this, is there a nature to death; if there is, what is it; and is the brain death doctors speak of valid and assignable to the remaining organ systems? Those interested in the subject will find the views and methods of the authors interesting, indeed. — J. R. C.



JOHN H. BASHAM, M.D.

Dr. John H. Basham, 67, Eureka, died April 23 in Wichita.

Dr. Basham was born in Wichita and was graduated from Washington University Medical School in St. Louis. He had been associated with the Basham Clinic since 1937.

Survivors include his wife, three sons, and two daughters. A memorial has been established with the Greenwood County Hospital.

RICHARD H. CLAIBORNE III, M.D.

Dr. Richard H. Claiborne III, 51, Baxter Springs, died June 16 in Tulsa, Oklahoma.

Dr. Claiborne was born in Coffeyville and was graduated from the University of Kansas School of Medicine in 1953. He had practiced in Baxter Springs for the past 24 years, and served as director of several departments and was in charge of instructional training for coronary care at Baxter Memorial Hospital.

Survivors include his wife, two sons, and one daughter. Memorial contributions may be made to Baxter Memorial Hospital coronary care unit in care of Baxter State Bank.

MURRAY C. EDDY, M.D.

Dr. Murray C. Eddy, 81, died April 30 in Hays.

Dr. Eddy was born in Colby and was graduated from Rush Medical College in 1926. He practiced in Colby from 1927-1935; then in Hays from 1935 until his retirement in 1969. He founded the Eddy Clinic in 1947. He was a past president of the Kansas Medical Society.

Survivors include his wife, one son, and one daughter. A memorial for medical scholarships has been established at Ft. Hays State University.

ALFRED S. HAWKEY, M.D.

Dr. Alfred S. Hawkey, 75, died May 16 in Newton.

Dr. Hawkey was born in Hesston and was graduated from the University of Kansas School of Medicine in 1930. He practiced at Axtell Christian Hospital for 48 years prior to retirement in 1978.

Survivors include his wife, four sons, and two daughters. A memorial has been established with Axtell Christian Hospital.

IRENE KOENEKE, M.D.

Dr. Irene Koeneke, 81, died July 12 in Halstead.

Dr. Koeneke was born in St. Paul, Minnesota, and was graduated from the University of Kansas School of Medicine in 1928. She practiced surgery in Halstead for 51 years prior to her retirement earlier this year; she was also active in the field of geriatrics. She was the widow of Arthur Hertzler, M.D., founder of the Hertzler Clinic.

Memorial contributions may be made to the Hertzler Foundation or the Health Museum in Halstead.

W. L. PRATT, M.D.

Dr. W. L. Pratt, 74, died April 27 in Leavenworth.

Dr. Pratt was born in Hoxie and was graduated from Creighton University School of Medicine in 1930. He practiced in Leavenworth for 43 years prior to retirement in 1975.

Survivors include his wife and two daughters. Memorial contributions may be made to a charity of the donor's choice.

GENE V. WILLIAMS, M.D.

Dr. Gene V. Williams, 55, El Dorado, was killed July 4 in a hot air balloon accident near Towanda.

Dr. Williams was born in El Dorado and was graduated from the University of Kansas School of Medicine. He also earned a degree in fine arts from the University of New Mexico and was noted as an artist and sculptor as well as an ear, nose, and throat specialist. He practiced for a time in Phoenix, Arizona, prior to returning to El Dorado in 1970.

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays	..... (913) 625-8251
H. Ivor Jones, M.D., Shawnee Mission	.. (913) 362-4040
Roy Neil, M.D., Hays	..... (913) 628-3215
George M. Penn, M.D., Topeka	..... (913) 234-9566
Ivan Rhodes, M.D., Wichita	..... (316) 685-1291
Alex Scott, M.D., Junction City	..... (913) 238-2518
Max Teare, M.D., Garden City	..... (316) 276-7689
Virginia L. Tucker, M.D., Lawrence	.....(913) 843-3750
Kermit Wedel, M.D., Minneapolis	..... (913) 392-2144
Kansas Medical Society, Topeka	(913) 235-2383/235-3619

Generics save money. Big money!

The FTC estimates that \$400 million could be saved annually on the nation's Rx bill if physicians prescribed generics. Are you saving *your* patients extra dollars?

Purepac, America's leading manufacturer of a national brand of generics, would like to show you the tremendous savings possible with just three of our 700 generic products:

DRUG		AVERAGE RX PRICE (100's)	\$ SAVINGS WITH PUREPAC	% SAVINGS WITH PUREPAC
Pavabid Capsules*	150 mg.	\$10.32		
Purepac Papaverine	150 mg.	3.95	\$6.37	61.7%
Equanil Tablets*	400 mg.	8.15		
Purepac Meprobamate	400 mg.	1.85	6.30	77.3%
Librium Capsules*	10 mg.	8.76		
Purepac Chlordiazepoxide HCl.	10 mg.	3.90	4.86	55.4%

*Registered trademarks of Marion Labs., Wyeth Labs., Roche Labs., respectively.

Purepac generics save money. Big money. Purepac is dedicated to providing your patients with quality products that are equivalent to their brand name counterparts at significant savings.

But we can't do it alone. We need your cooperation.

Send for Purepac's *free* Brand Name/Generic Name Reference Chart today. You'll receive an alphabetical listing of brand name drugs with their generic counterparts.

And next time you write a prescription, write for Purepac brand generics. Your patients will know you care.

PUREPAC. Competitive prices and peace of mind.

FREE!

Please send me my FREE copy of Purepac's Brand Name/Generic Name Chart.

Name _____

Address _____

City _____ State _____ Zip _____

Mail to Purepac Pharmaceutical Co.,
200 Elmora Avenue, Elizabeth, N.J. 07207

KM979



PUREPAC

Elizabeth, NJ 07207

THE LEADING NATIONAL BRAND OF GENERICS

Hydrops Fetalis

(Continued from page 503)

afflicted infants, leading to the improved survival shown in this series.

Summary

Seven cases of hydrops fetalis admitted to Wesley Medical Center during the past two years were reviewed. They were caused by anti-Kell, transverse sinus tear, congenital paroxysmal tachycardia, bilateral hydrothorax, anti-E and -c, and both donor and recipient in the fetio-fetal transfusion in twins. The search for causes other than anti-D is essential.

References

1. Diamond, L. K.; Blackfan, K. D. and Baty, J. M.: Erythroblastosis fetalis and its association with universal edema of the fetus, icterus gravis neonatorum and anemia of the newborn. *J. Pediatr.* 1:269, 1932.
2. Driscoll, S. G.: Hydrops fetalis. *N. Engl. J. Med.* 275:1432, 1966.
3. Scanlon, J. W. and Muirhead, D. M.: Hydrops fetalis due to anti-Kell isoimmune disease: Survival with optimal long-term outcome. *J. Pediatr.* 88:484, 1976.
4. Thumasathi, B. et al.: Hydrops fetalis associated with Bart's hemoglobin in northern Thailand. *J. Pediatr.* 73:132, 1968.
5. Macafee, C. A. J.; Fortune, D. W. and Beischer, N. A.: Non-immunological hydrops fetalis. *J. Obstet. Gynaecol. Br. Comm.* 77:226, 1970.
6. Phibbs, R. H. et al.: Cardiorespiratory status of erythroblastotic newborn infants: II blood volume, hematocrit, and serum albumin concentration in relation to hydrops fetalis. *Pediatrics* 53:13, 1974.

Infective Endocarditis

(Continued from page 508)

Answers

1. c
2. e
3. d
4. b
5. a

Suggested Readings

1. *Infective Endocarditis*. (Kaye, D., ed.). Baltimore, University Park Press, p. 272, 1976. (The first textbook to be published on endocarditis in recent years.)
2. *Infections of Prosthetic Heart Valves and Vascular Grafts*. (Duma, R. J., ed.). Baltimore, University Park Press, p. 352, 1977. (Presented in part at a conference in Richmond, Virginia.)
3. *Infective Endocarditis*. (Rahimtoola, S. H., ed.). New York, Grune and Stratton, p. 386, 1978. (Each chapter is authoritatively written and includes extensive references to primary literature.)

Tenuate®

(diethylpropion hydrochloride NF)

Tenuate Dospan®

(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect, rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle, the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression, changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSEAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSEAGE: Manifestations of acute overdose include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine™) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdose.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensor of Merrell®

References: 1. Citations available on request from Medical Research Department, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M. T., O'Dillon (Dillon), R. H. and Leyland, H. M. A comprehensive review of diethylpropion hydrochloride. In: *Central Mechanisms of Anorectic Drugs*, S. Garattini and R. Samanin, Ed., New York, Raven Press, 1978, pp. 391-404.

Merrell

9 4672 (Y957A)

**Overweight may not always be simple...
complications can develop*.
Complicated or not...**

Tenuate[®] Dospan[®] ^{IV} **(diethylpropion hydrochloride NF)** **75 mg. controlled-release tablets**

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict appetite control and a successful program of weight reduction may tend to diminish the incidence or severity of the complications in some patients. Diethylpropion hydrochloride has been reported useful in such patients and while it is not suggested that Tenuate itself in any way reduces the complications of overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. **Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.**

In uncomplicated overweight.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

*Studies have shown that obesity is associated with an increased incidence of hypertension, symptomatic heart disease, adult-onset diabetes, and other diseases.

Merrell

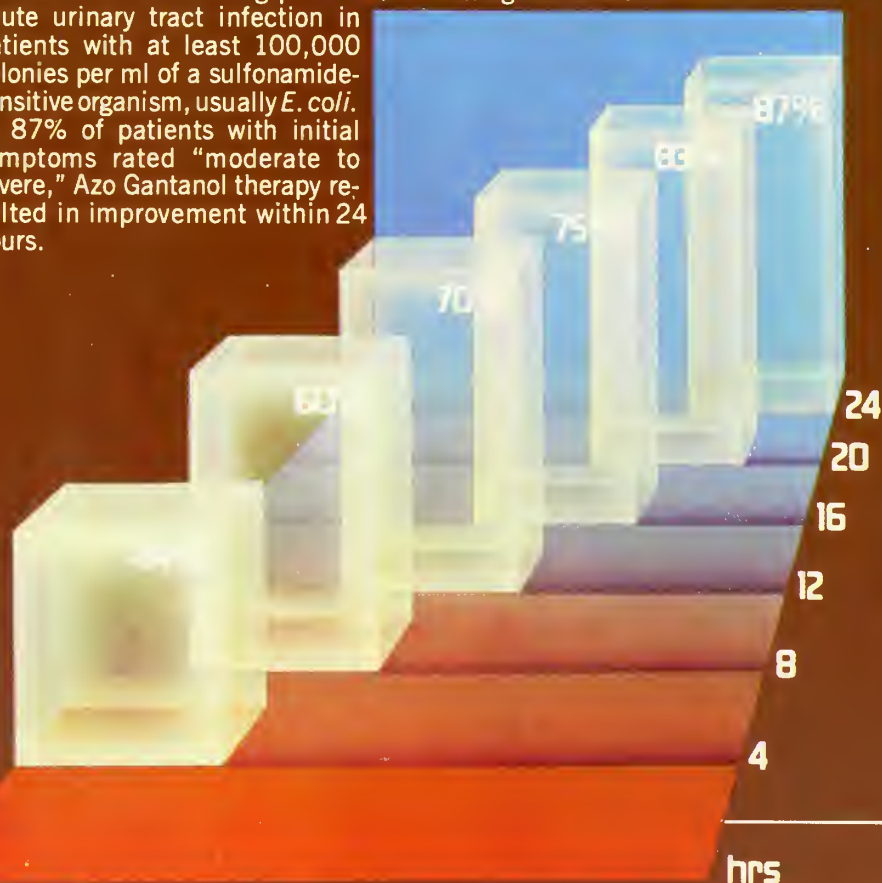


For prescribing information see opposite page.

Important data on the pain of acute cystitis:

In 87% of patients studied (303 of 349), Azo Gantanol® reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli*. In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Fast pain relief plus effective antibacterial action

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for
the pain

for
the pathogens

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note:** Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. Increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides. Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G. disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

Roche Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110



Personalities —IN KANSAS MEDICINE

Alex C. Mitchell, Lawrence, has accepted the position of Medical Director of the Kansas Foundation for Medical Care, Inc.

Fredrick P. Wolff, Pratt, recently attended a week-long rheumatology clinic sponsored jointly by the Kansas Chapter of the Arthritis Foundation and the University of Kansas School of Medicine.

Dennis Moore, Wichita, spoke on care of the terminally ill to a recent meeting of the Greater Wichita Area Chapter of the American Association of Critical Care Nurses.

Rex R. Fischer, Manhattan, has been elected chairman of the board of directors of Blue Shield of Kansas succeeding **J. E. Roderick**, Salina. Other officers and board members include **W. E. McAllaster**, Great Bend; **Herbert Fransen**, Newton; **George J. Mastio**, Wichita; **A. O. Tetzlaff**, Shawnee Mission; **Carlyle M. Dunshee**, Fort Scott; **James N. Glenn**, Emporia; **J. G. Kendrick**, Wichita; **M. D. Christiansen**, Kiowa; **John D. Huff**, Kansas City; **F. Calvin Bigler**, Garden City; and **Charles A. Isaac**, Newton.

Francis W. Huston, Winchester, was awarded an Honorary Doctor of Humane Letters degree from Tarkio College, Tarkio, Missouri.

Ray Allen, Liberal, has been installed as president-elect of the American Heart Association, Kansas Affiliate, Inc.

Bradford S. Prokop, Topeka, has been appointed to the board of alumni councilors of Northwestern University School of Medicine.

Kenneth Zabel, Pittsburg, was recently inducted into Alpha Omega Alpha, national medical honor society.

Howard N. Ward, Topeka, recently was graduated cum laude from Washburn University School of Law.

Kermit Wedel, Minneapolis, was one of several physicians to present lectures to Emergency Medical Technician classes.

Joseph Merrit, Wichita, addressed a recent meeting of the Cesarean Birth Delivery Support Group.

Charles C. Craig, Newton, spoke at a program presented by the Harvey County division of the Kansas Chapter, Arthritis Foundation.

Joe Hume, Wichita, spoke at a recent meeting of the Cloud County Diabetes Association.

Robert Laing discussed "Understanding Gastro-Intestinal Problems as Related to Heart Patients" at a recent meeting of Heart of America Chapter of Mended Hearts in Kansas City.

G. A. Surface has been elected chairman of Unified School District 388, Ellis.

A. C. Irby, Parsons, recently spent six months working in a hospital on the Chippewa Indian reservation at Red Lake, Minnesota.

PHYSICIAN LIBERATION

Have you found full-time practice all consuming with little time for yourself and family? Liberate yourself. Enjoy Rural America and the practice of medicine by joining our locum tenens staff. Individually tailored, these positions give you the time to enjoy life. The demand for this service is so great that we are expanding our staff of qualified family practitioners. Provide care where it is needed and appreciated and we'll make sure you don't have to retire or drop out to enjoy life to its fullest.

For further information call or write to:

Charles M. Gluck, M.D.
Office of the Medical Director
2414 West 7800 South, Suite 202
West Jordan, Utah 84084
1-(800) 453-6403

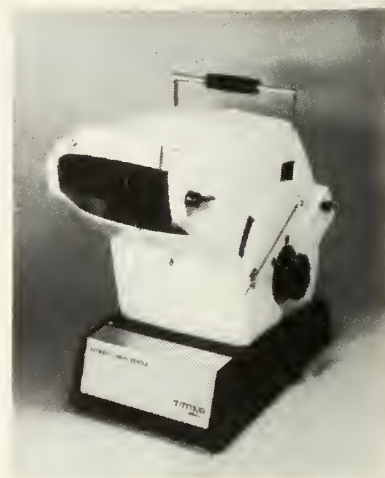
VISION TESTER

BY Titmus

This professional model tests vision for:

preschool & illiterate children
primary grade children
older children & adults
FAA examinations

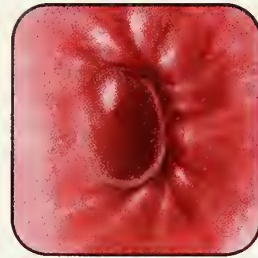
to arrange a demonstration in
your office contact your local
Goetze-Niemer salesman or call



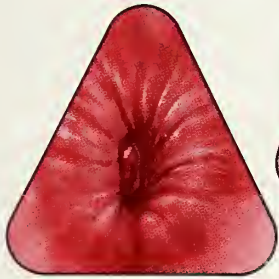
The GOETZE-NIEMER Co.

1701 Brooklyn, K.C., MO. 816-231-1900
serving the Midwest since 1884

For hemorrhoids and other anorectal conditions



External hemorrhoids



Internal hemorrhoids



Pruritus ani



Proctitis



Anal fissures



Easy to handle,
easy to insert,
comfortably shaped—
Rx only

Easy to apply,
nonstaining—
Rx only

Prescribe **Anusol-HC[®]** Suppositories/Cream for symptomatic relief

- Effectively reduces inflammation and edema
- Rapidly relieves pain and itching

ANUSOL-HC[®] SUPPOSITORIES

Hemorrhoidal Suppositories

ANUSOL-HC[®] CREAM

Rectal Cream with Hydrocortisone Acetate

CAUTION: Federal law prohibits dispensing without prescription.

Description: Each Anusol-HC Suppository contains hydrocortisone acetate, 10.0 mg; bismuth subgallate, 2.25%; bismuth resorcin compound, 1.75%; benzyl benzoate, 1.2%; Peruvian balsam, 1.8%; zinc oxide, 11.0%; also contains the following inactive ingredients: bismuth suboxide, calcium phosphate, and certified coloring in a hydrogenated vegetable oil base.

Each gram of Anusol-HC Cream contains hydrocortisone acetate, 5.0 mg; bismuth subgallate, 22.5 mg; bismuth resorcin compound, 17.5 mg; benzyl benzoate, 12.0 mg; Peruvian balsam, 18.0 mg; zinc oxide, 110.0 mg; also contains the following inactive ingredients: propylene glycol, bismuth suboxide, propylparaben, methylparaben, polysorbate 60 and sorbitan monoacetate in a water-miscible base of mineral oil, glyceryl stearate and water.

Indications: Anusol-HC Suppositories and Anusol-HC Cream are adjunctive therapy for the symptomatic relief of pain and discomfort in: external and internal hemorrhoids, proctitis, papillitis, cryptitis, anal fissures, incomplete fistulas and relief of local pain and discomfort following anorectal surgery.

Anusol-HC Cream is also indicated for pruritus ani. Anusol-HC is especially indicated when inflammation is present. After acute symptoms subside, most patients can be maintained on regular Anusol[®] Suppositories or Ointment.

Contraindications: Anusol-HC[®] Suppositories and Anusol-HC[®] Cream are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation.

Warnings: The safe use of topical steroids during pregnancy has not been fully established. Therefore, during pregnancy, they should not be used unnecessarily on extensive areas, in large amounts, or for prolonged periods of time.

Precautions: Symptomatic relief should not delay definitive diagnoses or treatment. If irritation develops, Anusol-HC Suppositories and Anusol-HC Cream should be discontinued and appropriate therapy instituted.

In the presence of an infection the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

Care should be taken when using the corticosteroid hydrocortisone acetate in children and infants.

Anusol-HC is not for ophthalmic use.

Dosage and Administration: Anusol-HC Suppositories—Adults: Remove foil wrapper and insert suppository into the anus. One suppository in the morning

and one at bedtime, for 3 to 6 days or until inflammation subsides. Then maintain patient comfort with regular Anusol Suppositories.

Anusol-HC Cream—Adults: After gentle bathing and drying of the anal area, remove tube cap and apply to the exterior surface and gently rub in. For internal use, attach the plastic applicator and insert into the anus by applying gentle continuous pressure. Cream should be applied 3 or 4 times a day for 3 to 6 days until inflammation subsides. Then maintain patient comfort with regular Anusol Ointment.

NOTE: If staining from either of the above products occurs, the stain may be removed from fabric by hand or machine washing with household detergent.

How Supplied: Anusol-HC Suppositories—boxes of 12 (N 0047-0089-12) and 24 (N 0047-0089-24); in silver foil strips with Anusol-HC W/C printed in black.

Anusol-HC Cream—one-ounce tube (N 0047-0090-01); with plastic applicator, detachable label.

Store between 15°-30° C (59°-86° F).

Full information is available on request.



Warner/Chilcote

Division, Warner-Lambert Company
Morris Plains, N.J. 07950

AN-GP-91

The professional source of anorectal comfort

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

The advertising in

THE JOURNAL

keeps you informed
and helps pay the
publishing costs!

When the local
representative calls,
tell him you saw
his company's ad in
your journal.

QuinammTM

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS: For the prevention and treatment of nocturnal recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis, and static foot deformities.

CONTRAINDICATIONS: Because of the quinine content, Quinamm is contraindicated in women of childbearing potential, in pregnancy, in patients with known quinine sensitivity, and in patients with glucose-6-phosphate dehydrogenase deficiency. Hemolysis (with the potential for hemolytic anemia) has been associated with a G-6-PD deficiency in patients taking quinine.

PRECAUTIONS: Thrombocytopenic purpura may follow the administration of quinine in highly sensitive patients. Recovery will follow withdrawal of the medication. Cinchona alkaloids, including quinine, have the potential to depress the hepatic enzyme system that synthesizes the vitamin K-dependent factors. The resulting hypoprothrombinemic effect may enhance the action of warfarin and other oral anticoagulants.

ADVERSE REACTIONS: Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. If ringing in the ears, deafness, skin rash, or visual disturbances occur, the drug should be discontinued.

DOSAGE AND ADMINISTRATION:

1 tablet upon retiring. When necessary, 1 additional tablet may be taken following the evening meal.

Product Information as of September, 1977
U.S. Patent 2,985,558

Merrell

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to:
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell®



for Knotts in the night



QuinammTM

each tablet contains quinine sulfate 260 mg., aminophylline 195 mg.

specific therapy for painful night leg cramps

Nocturnal recumbency leg muscle cramping is frequently an unwelcome bedfellow for many patients—especially those with arthritis, diabetes or peripheral vascular disease... consider Quinamm... simple, convenient dosage—usually just one tablet at bedtime... can provide restful, welcome sleep without night leg cramps.

See opposite page for prescribing information.

COMPATIBILITY



Does it influence your choice of a peripheral/cerebral vasodilator*?

- Vasodilan—compatible with coexisting diseases
- Vasodilan—compatible with concomitant therapy
- Vasodilan—compatible with your total regimen for vascular insufficiency

***Indications:** Based on a review of this drug by the National Academy of Sciences-National Research Council and/or other information, the FDA has classified the indications as follows:

Possibly Effective

1. For the relief of symptoms associated with cerebral vascular insufficiency
 2. In peripheral vascular disease of arteriosclerosis obliterans, thromboangitis obliterans (Buerger's Disease) and Raynaud's disease
- Final classification of the less-than-effective indications requires further investigation.

Composition: Vasodilan tablets, isoxsuprine HCl, 10 mg. and 20 mg. Vasodilan injection, isoxsuprine HCl, 5 mg., per ml.

Dosage and Administration: Oral: 10 to 20 mg., three or four times daily. Intramuscular: 5 to 10 mg. (1 or 2 ml.) two or three times daily. Intramuscular administration may be used initially in severe or acute conditions.

Contraindications and Cautions: There are no known contraindications to oral use when administered in recommended doses. Should not be given immediately postpartum or in the presence of arterial bleeding.

Parenteral administration is not recommended in the presence of hypotension or tachycardia.

Intravenous administration should not be given because of increased likelihood of side effects.

Adverse Reactions: On rare occasions oral administration of the drug has been associated in time with the occurrence of hypotension, tachycardia, nausea, vomiting, dizziness, abdominal distress, and severe rash. If rash appears the drug should be discontinued.

Although available evidence suggests a temporal association of these reactions with isoxsuprine, a causal relationship can be neither confirmed nor refuted.

Administration of single dose of 10 mg. intramuscularly may result in hypotension and tachycardia. These symptoms are more pronounced in higher doses. For these reasons single intramuscular doses exceeding 10 mg. are not recommended. Repeated administration of 5 to 10 mg. intramuscularly at suitable intervals may be employed.

Supplied: Tablets, 10 mg., bottles of 100, 1000, 5000 and Unit Dose, Tablets, 20 mg., bottles of 100, 500, 1000, 5000 and Unit Dose, Injection, 10 mg. per 2 ml. ampul, box of six 2 ml. ampuls.

U.S. Pat. No. 3,056,836

VASODILAN[®]

(ISOXSUPRINE HCl)
20-mg tablets

MeadJohnson PHARMACEUTICAL DIVISION

© 1978 MEAD JOHNSON & COMPANY • EVANSVILLE, INDIANA 47721 U.S.A. MJL-7-4256

Ka M P A C
KANSAS MEDICAL POLITICAL ACTION COMMITTEE

1300 TOPEKA AVE.

•

TOPEKA, KANSAS 66612

Dear Doctor:

KaMPAC has recently received two awards.

At the house of delegates meeting for the Kansas Medical Society, KaMPAC received recognition for the high average contribution per member. I had the honor of receiving this award on behalf of KaMPAC and its members, and would like to thank those of you who made this possible.

At the AMA house of delegates meeting in July, KaMPAC again won recognition — in this instance because of membership participation of the KMS officers.

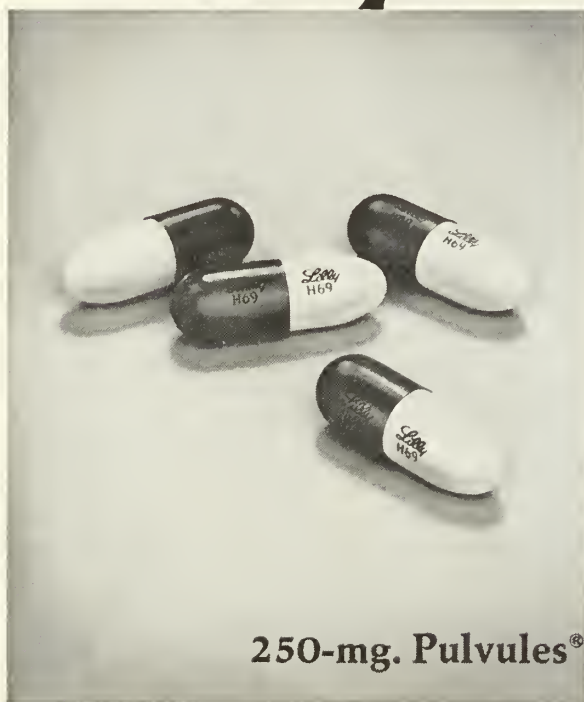
KaMPAC is outstanding in many respects and we do want to maintain the high levels of performance in the areas mentioned above.

There is one area where KaMPAC fares poorly, and that is in the number of physicians in this state who participate as members. I would like to encourage those of you who are not members to join KaMPAC and help it to become stronger so that it may preserve the medical care system that we enjoy today.

Sincerely,

Ronald Davis, M.D.
Chairman

easy to take



Keflex®
cephalexin



500738

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206

Obviously we don't have
branches everywhere.

But we have them
where
they count.



Topeka • KC • Wichita • St. Louis • Tulsa

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

INDEX TO ADVERTISERS

Allen County Aviation, Inc.	528
Beltone Electronics Corporation	459
Burroughs Wellcome Company	464
Capitol Federal Savings & Loan Ass'n	527
Central Bank & Trust	460
Goetze-Niemer Company	522
P. W. Hanicke Manufacturing Company	524
Health Systems	522
Hospital Instrument Service Co.	468
Lattimore-Fink Laboratories	460
Eli Lilly and Company	526
Mead-Johnson Pharmaceutical Division	524b
Medical Crosswords	528
Medical Protective Company	463
Merck Sharp & Dohme	462
Merrell-National Laboratories	460b, 461, 462, 520, 520a, 524, 524a
Mid-America Computing	463
Midwest Pension Planners	457
Munns Medical Supply Company	527
Purepac Pharmaceutical Co.	519
Roche Laboratories	458, 520b, C3, C4
Smith Kline & French	460a
Warner/Chilcott Laboratories	523
Wyeth Laboratories	466, 467

CLASSIFIED ADVERTISEMENTS

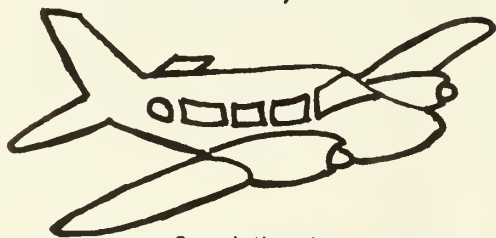
FOR SALE: Soundsciber equipment — three recorders, two transcribers in working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

GREAT BEND — EMERGENCY MEDICINE PRACTICE available July 1, Mon-Thurs evenings, 5 PM-5 AM. Paid professional liability insurance, excellent specialty back-up, modern hospital, guaranteed annual income, \$50,000. Contact Tom Cooper, M.D., 1-800-325-3982.

GENERAL RADIOLOGIST for Radiology & Nuclear Medicine Depts. of 100-bed general hospital in metro suburb. Outstanding recreational attractions; 15 active staff physicians. Excellent opportunities in NE Oklahoma area with great potential. Send CV to Box 1-0979 in care of the *Journal*.

FAMILY PHYSICIAN wanted to associate with young practitioner in one year old practice in central Nebraska. Prefer A.B.F.P. Sixty bed hospital adjacent to new office building in rural community of 6,000. Full hospital privileges. Good schools, recreation nearby. Contact Michael L. Westcott, M.D., A.B.F.P., 1315 Tibbals St., Holdrege, NE 68949, 308/995-6111.

Allen County Aviation, Inc.



Specialists in

Stabilized Patient Transfers
in

Single and Multi Engine Aircraft
includes

Nursing • Suction • Oxygen
for quotes between

Continental United States Cities

Call Collect: (316) 365-6783

(Our aircraft provide sufficient room for patient, two persons and crew.)

*IT'S NEW! A Challenging Book
of All-Original*

MEDICAL CROSSWORD PUZZLES

And Other Literary Diversions

* * *

100 pages of entertainment for physicians. A book you'll turn to often for relaxation. Only book of its kind.

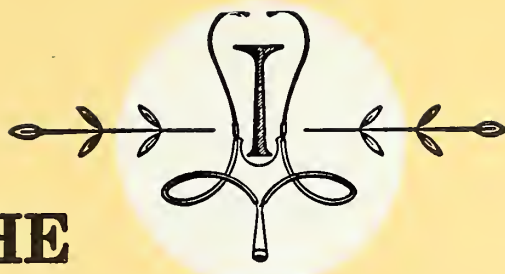
* * *

Only \$2.95 a copy, postpaid

Order now from

MEDICAL CROSSWORDS
Box 99187
San Francisco, CA 94109

Orders filled immediately.

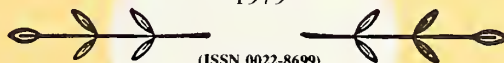


THE
Journal
OF THE
Kansas
Medical
Society

OCTOBER
1979

(ISSN 0022-8699)

VOL. LXXX
NO. X



LIBRARY
U.C. SAN FRANCISCO

NOV 2 1979

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for October

Scientific Articles

- Familial Exostosis: A Follow-up — Paul H. Kirz, M.D.;
H. O. Marsh, M.D.; and Bernard T. Poole, M.D.,
Wichita 543
- Sudden Death Syndrome: Reports of 16 Patients on High
Doses of Phenothiazine — Chih-Ping Yang, M.D., and
Ramon A. Guilan, M.D., Topeka 547
- Thermal Injuries: Assessment and Treatment for Out-patient
Care — David Krier, M.S.P.H., and Mani M. Mani,
M.D., Kansas City 550

Case Reports

- Basal Ganglia Calcification: An Effect of Long-term
Phenothiazine Therapy — Iftekar Ahmed, M.D.,
Leavenworth 554
- Myocardial Abscess Mimicking Acute Ischemic Myocardial
Infarct — Vane Wongsurawat, M.D.; Robert D. Porter,
M.D.; Nirandon Wongsurawat, M.D.; and Ramon A.
Guilan, M.D., Topeka 555
- Salt Restriction for the Treatment of Mild Hypertension —
Harold L. Harrison, M.D.; Michael A. Linshaw, M.D.;
and Francis E. Cuppage, M.D., Kansas City, Kansas 555
- Fatal Yersinia Enterocolitica Septicemia in a Compromised
Host — G. I. Saliou-Diallo, M.D.; A. Kim, M.D.;
J. Pike, M.D.; and G. M. Rao, M.D., Leavenworth 558

Current Comment

- When Is a Diabetic? — Joseph L. Kyner, M.D., Kansas City 560

Miscellaneous

- Advertisers 584
- AMA House of Delegates 577
- Auxiliary News 535
- Book Reviews 539
- Classified Advertisements 584
- Council Meeting 567
- Editorial Comment: *Deus ex machina* — sometimes 564
- Impaired Physician Program Resource List 540
- Kansas Press Looks at Medicine 569
- Obituaries 566
- President's Message 529
- Vox Dux 576

Address all correspondence to the
JOURNAL OF THE KANSAS MEDICAL SO-
CIETY, 1300 Topeka Avenue, To-
peka, Kansas 66612; 913-235-2383.
Manuscripts should be submitted to
the Managing Editor. Refer to
"Information for Authors" for
details.

Editor: David E. Gray, M.D., 105
Medical Arts Bldg., Topeka 66604.

Editorial Board: David E. Gray, M.D.,
Editor; Richard H. Greer, M.D., To-
peka; M. Martin Halley, M.D., To-
peka; Donald R. Pierce, M.D., To-
peka; John A. Segerson, M.D., To-
peka.

Associate Editors: Jesse D. Rising,
M.D., Kansas City; Robert T. Man-
ning, M.D., Wichita.

Editorial Consultant: Orville R. Clark,
M.D., St. Petersburg, FL.

Managing Editor and Advertising
Manager: Val Braun, M.P.A.;
Editorial Assistant: Eleanor Bell,
1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter,
1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is
made to publish only accurate arti-
cles and legitimate advertisements,
the JOURNAL denies legal responsi-
bility for statements, opinions, or
advertisements appearing under
the names of contributors or con-
cerns.

THE JOURNAL is published monthly by
the Kansas Medical Society, 1300
Topeka Avenue, Topeka, Kansas
66612. A year's subscription is in-
cluded in membership in the Kan-
sas Medical Society, with \$10.00 of
each member's dues apportioned to
the JOURNAL. Rates to others, except
in foreign countries, \$10.00 per
year; single copies \$1.50; rosters
\$10.00. Printed by The Ovid Bell
Press, Inc., Fulton, Missouri.
Second-class postage paid at To-
peka, Kansas, and at additional
mailing offices. POSTMASTER:
Send address changes to Kansas
Medical Society, 1300 Topeka Av-
enue, Topeka, Kansas 66612.

The President's Message

Our American system of democracy is based on the one person-one vote principle. In this way a poor, insignificant laborer has as much power as a wealthy, prestigious industrialist.

There are many people who feel that by allowing everyone to vote the government is hampered in its ability to carry out policies that are wisest for the country as a whole. These people feel that an enlightened monarchy or dictatorship is a more efficient form of government. Unfortunately, power tends to "pollute" and, thus, dictatorships and monarchies tend to lose sight of the needs of the masses.

Therefore, the one person-one vote philosophy is still the best principle as far as being a practical way to make government responsive to the needs of all people. Our elected officials do listen to the needs and desires of their constituents.

Our state legislature is not in session at this time of year. However, interim committees involve each of our elected officials at the state level and they are at work now. This is an excellent time for each of us as citizens to contact our elected officials and express to them our concerns and expectations for next winter's legislative session. If you don't know your state representative and state senator personally, I urge you to contact them now, before the legislative session starts. Call them. Write them. Take them to lunch. Express your interests and concerns and let them know that you are willing to supply them with information about matters that concern you for the upcoming legislative session.

While you have only one vote at the ballot box, your influence at the legislature is directly related to your personal knowledge and contact with your legislators, and your ability to communicate to them your opinions about legislative matters.

Our government represents all people, but it really represents those people who get involved enough in the political process to become part of the political system. Remember, if competent people choose not



to get involved in politics, then they will get what they deserve, which is government by incompetent people. Call, write, or see your legislator today!

Faternally,

A handwritten signature in cursive script, reading "Donald D. Goring, M.D.".

President

A personal note:

John D. Huff, M.D., your KMS President in 1977-78, died September 16. He was a very dedicated, conscientious person who served the Medical Society well. His ability to get to the heart of each issue was admired by all of us. His loss will be felt by the medical community as well as by his patients. I will personally miss his expert advice and his keen sense of humor in our Medical Society's functions, and all of us mourn his departure. Our heartfelt sympathy goes out to his wife and family.

PERFORMANCE. PROVEN EFFECTIVENESS WITHIN A WIDE SAFETY MARGIN.



While Roche Laboratories already knows more about the performance of Librium than anyone else, we keep on learning every day.

For example, the highly favorable benefits-to-risk ratio of Librium is a well-documented matter of record.

And, of course, the specific calming action of Librium has been demonstrated in millions of patients around the world. In a large number of these patients, Librium was used concomitantly with other primary medications.

Proven performance within a wide safety margin. Basically, that's what Librium is all about.

LIBRIUM® chlordiazepoxide HCl/Roche THE ANXIETY-SPECIFIC

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states. Efficacy beyond four months not established by systematic clinical studies. Periodic reassessment of therapy recommended.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malforma-

tions as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.



Roche Products Inc.
Manati, Puerto Rico 00701



A simple solution for beating the high cost of feeding babies.

Powdered Soyolac mixed with water (according to directions on the label) is an inexpensive, soy-based infant formula your patients can buy.

Up to 50% less expensive than ready-to-serve formulas.

Up to 25% less expensive than liquid concentrates, including our own!

Soyolac is the only leading milk-free infant formula available as an inexpensive powder. It provides exactly the same nutritional balance as Soyolac's con-

centrated and ready-to-serve infant soy formulas — at a fraction of the cost.

Your patients who use formula will appreciate knowing about it.

For detailed information and samples, please call or write the Soyolac sales representative in your area.

Loma Linda Foods 11503 Pierce Street
Riverside, CA 92515 (714) 785-2475

Loma Linda Foods 13246 Wooster Road
Mount Vernon, OH 43050 (614) 397-7077

Loma Linda®

SERVING YOU IN KANSAS



501 Gage
P.O. Box 399
Topeka, Kansas 66601
913/272-2300

2959 S. Spruce
Wichita, Ks 67216
316-522-8111

9202 Barton
Overland Park, Ks 66214
913-492-5820

HUAMAN PATHOLOGY LABORATORY TOPEKA KANSAS

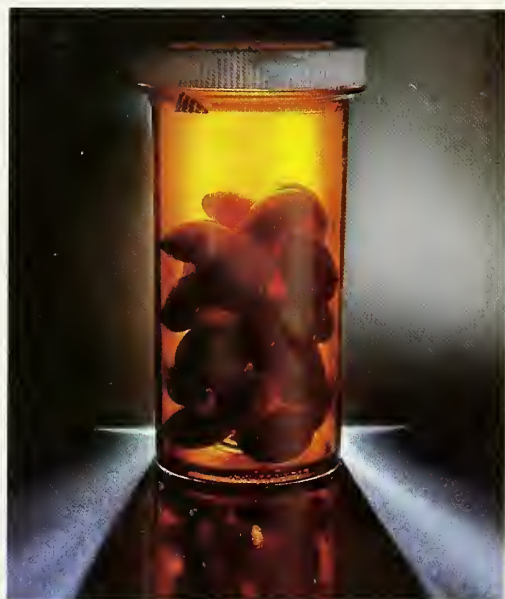
Antonio Huaman, M.D., Director

Complete services and consultation for Anatomic, Oncologic, Forensic, and Radioisotopic Pathology and Cytology for physicians' offices and hospitals.

Direct inquiries to:

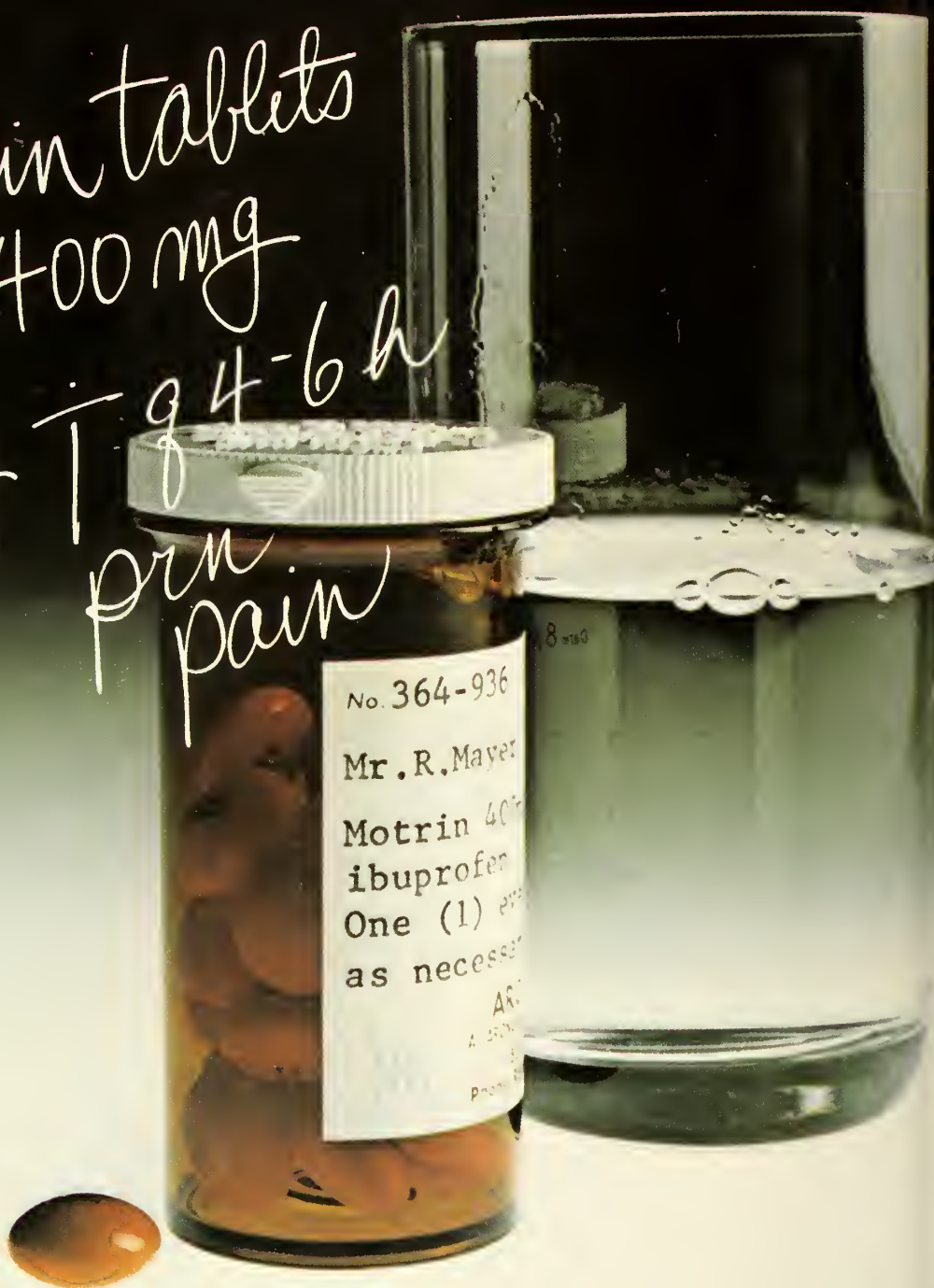
**Antonio Huaman, M.D.
Continental Medical Building, Suite B-20A
631 S.W. Horne Street — P.O. Box 1774
Topeka, KS 66606
Phone (913) 233 3566**

The Upjohn Company
announces
a new
indication for
Motrin[®]
(ibuprofen)



A well-tolerated, nonnarcotic prescription for pain

Motrin tablets
400 mg
Sig T q 4-6 h
prn
pain



Motrin now proved an effective analgesic for mild to moderate pain

Motrin 400 mg provided greater relief of pain than did propoxyphene 65 mg in controlled clinical pain studies.

Time after drug administration (hour)		.5	1	2	3	4
Mean relief-of-pain scores* (No. patients reporting)	Motrin 400 mg ibuprofen	.89 (108)	1.25 (108)	1.36 (108)	1.28 (107)	1.19 (106)
	Darvon 65 mg propoxyphene	.66 (100)	.99 (99)	1.13 (96)	.99 (96)	.80 (96)
Statistical significance		p<0.02	p<0.01	p<0.05	p<0.02	p<0.002

*0 = No relief 1 = Partial relief 2 = Complete relief

Data on file at The Upjohn Company

Motrin demonstrated statistically significant greater relief of pain than did Darvon at all time intervals.

Motrin 400^{TABLETS}mg
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming
- Rapid analgesic action • Indicated in acute and chronic pain
- Well tolerated. The most common side effect with Motrin is mild gastrointestinal disturbance.

Please turn the page for a brief summary of prescribing information.

Upjohn

Motrin® (ibuprofen)
now proved an
effective analgesic for
mild to moderate pain

Motrin® Tablets (ibuprofen, Upjohn)

Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. Aspirin used concomitantly may decrease Motrin blood levels. Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness,* headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400 or 600 mg t.i.d. or q.i.d.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

Do not exceed 2400 mg per day.

Caution: Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

Upjohn THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

MED B-4-S

ALDORIL®
containing methyldopa and hydrochlorothiazide

TABLETS

ALDORIL® -25

containing 250 mg ALDOMET® (Methyldopa, MSD)
and 25 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL® -15

containing 250 mg ALDOMET® (Methyldopa, MSD)
and 15 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL® D30

containing 500 mg ALDOMET® (Methyldopa, MSD)
and 30 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL® D50

containing 500 mg ALDOMET® (Methyldopa, MSD)
and 50 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

Merck Sharp & Dohme, Division of
Merck & Co., Inc., West Point, PA 19486

Copyright © 1979 by Merck & Co., Inc.

MSD
MERCK
SHARP
DOHME
J9AR13

**YOU'LL GET PROMPT
PROFESSIONAL RESULTS
WHEN YOU REFER A
HEARING-IMPAIRED
PATIENT TO A**

Beltone[®]

Hearing Aid Specialist

**IN KANSAS
YOUR INDEPENDENT AUTHORIZED DEALERS ARE:**

Charlie Gillum
Belton Hearing Aid Service
103 North 4th Street
Manhattan, Kansas 66502
(913) 776-6011

Belton Hearing Aid Service
705 Commercial
Emporia, Kansas 66801
(316) 343-3147

Woodrow R. Rice
Belton Hearing Aid Service
216 East First Street
Wichita, Kansas 67202
(316) 264-8870 & 264-2571

Belton Hearing Aid Service
Wolcott Building Lobby
Hutchinson, Kansas 67501
(316) 665-7551

Belton Hearing Aid Service
400 North Tenth
Independence, Kansas 67301
(316) 331-4170

Belton Hearing Aid Service
234 South Santa Fe
Salina, Kansas 67401
(913) 827-8911

Paul Donigan
Belton Hearing Aid Service
929 Kansas Ave.
Topeka, Kansas 66612
(913) 234-3301

Beltone

WORLD LEADER IN HEARING AIDS AND HEARING TEST INSTRUMENTS

ELECTRONICS CORPORATION

4201 West Victoria Street · Chicago, Illinois 60646

An American Company

IT'S HIGHLY RECOMMENDED... AND FOR GOOD REASONS



Polymyxin B

Neomycin

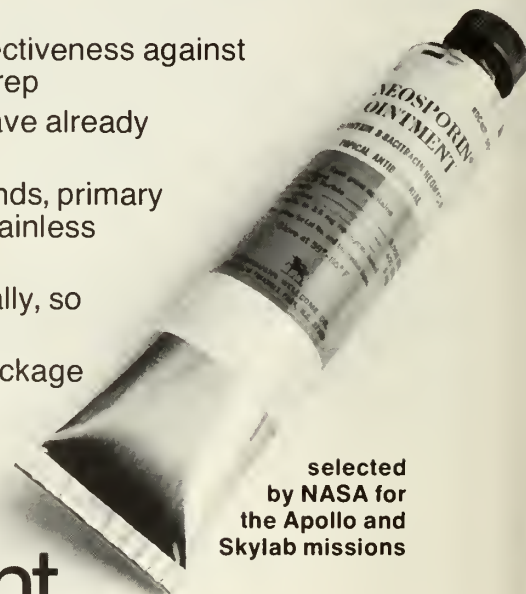
Bacitracin

Gram-negative
Pseudomonas
Hemophilus
Klebsiella
Aerobacter
Escherichia
Proteus
Gram-positive
Corynebacterium
Staphylococcus
Streptococcus
Pneumococcus

1. provides broad-spectrum, overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep
2. helps prevent topical infections, and treats those that have already started
3. it's good medicine for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses; and it's painless and cosmetically pleasing
4. contains three antibiotics that are rarely used systemically, so the risk of sensitization is minimal
5. you can recommend it in any of the three convenient package sizes: 1 oz tube, 1/2 oz tube, or the versatile, single-use foil packet

NEOSPORIN® Ointment

(polymyxin B-bacitracin-neomycin)



selected
by NASA for
the Apollo and
Skylab missions

Each gram contains Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx) foil packets

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations,

prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709



Auxiliary News

September brings us the realization of the end of summer's heat, vacations, leisure time; and also the beginning of school schedules, committee meetings, and organizational meetings.

On September 6 and 7, the KMSA Long Range Planning Committee, Nominating Committee, and the Executive Board met in Minneapolis to continue planning the functions for the remainder of the year. Plans are now under way to present a Communications Seminar in conjunction with the Fall Board of Directors Meeting. This will be held November 27-28 in Salina. Mrs. William (Peggy) Null will coordinate this effort. Peggy is the Resource Advisor on the Auxiliary state board. She organized a Speakers Bureau for the KMSA which will be a tremendous asset for county and state meetings.

Another conference was recommended by the Long Range Planning Committee to be held in the spring dealing with the Quality of Life — a conference encompassing every age of life. Time ran out on our hope of holding the seminar on the medical family, so this aspect will be covered in the spring conference.

Last, but of most importance, the Auxiliary will be supporting the efforts of the AMAA in its new health campaign. Following is a reprint of an article from the AMAA publication, *Facets*, explaining their new program and implementation of it.

It's never too soon or too late to begin eating right or exercising regularly. That's the message AMA Auxiliary members will be giving to Americans across the country as they begin work on a new campaign — Shape Up for Life!

Launched at the auxiliary's 1979 Convention in July, the campaign is aimed at keeping Americans healthy by making them aware that proper diet and exercise are vital to good health.

The idea for the campaign, which will be directed by the national Health Projects Committee, springs from the organization's long-time interest in making people aware of fitness and what they can do to help keep themselves healthy. And it is the auxiliary's contribution to the health care industry's Voluntary Effort for cost containment.

The campaign logo which appears here and on all campaign materials, was designed by Draper Daniels, Inc., Advertising especially for the auxiliary campaign. It symbolizes the good feeling which comes from optimum health.

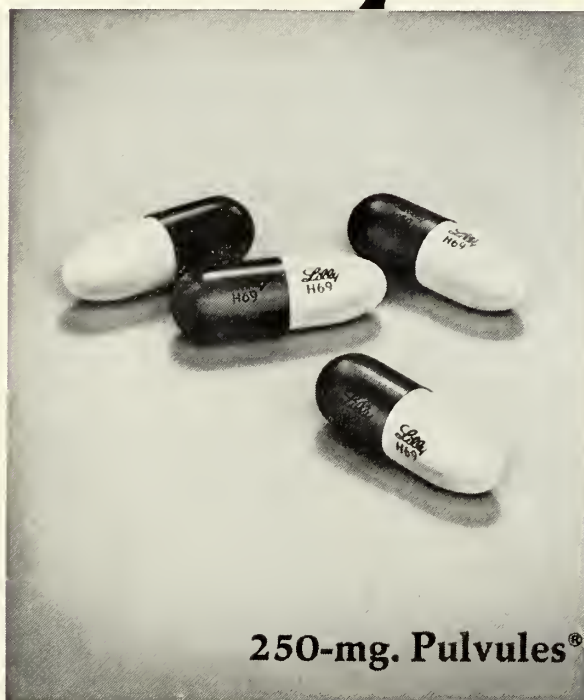
Key components of the effort include a poster and pamphlet suitable for placing in doctors' offices, schools, union halls, businesses/industries, civic centers, churches, clinics, and other public buildings. A new Food for Fitness Package Program gives ideas for community projects, plus resources for films and other materials. Radio and television public service announcements, prepared by Draper Daniels for the AMA will carry the "Shape Up for Life" message into millions of homes in the fall.

Not a one-year effort, the campaign focus in 1979-80 is food for fitness. In July 1980, a second phase will be introduced to focus on physical fitness.

Materials and information are available from AMA Auxiliary, 535 N. Dearborn St., Chicago, IL 60610.

Sincerely,
Kathy Wedel
President
Kansas Medical Society Auxiliary

easy to take



Keflex®
cephalexin



500738

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206



Tagamet®

brand of

cimetidine

How Supplied:

Pale green 300 mg. tablets
in bottles of 100 and Single Unit Packages of 100
(intended for institutional use only).

Injection, 300 mg./2 ml.,
in single-dose vials
and in 8 ml. multiple-dose vials,
both in packages of 10.

SK&F LAB CO.
a SmithKline company

**When painful spasm
is the presenting
symptom...**



in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

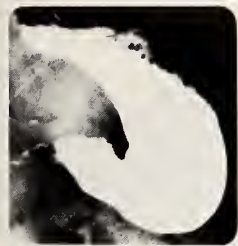
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

“The correlation of spasm relief and drug given was excellent.”

*This drug has been classified “probably” effective in treating functional bowel/irritable bowel syndrome.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:
King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (symp).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloro-duodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis; toxic megacolon complicating ulcerative colitis, myasthenia gravis. **WARNINGS** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness, drowsiness; weakness; dizziness; insomnia, nausea, vomiting, impotence, suppression of lactation, constipation, bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations, some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSEAGE AND ADMINISTRATION** Dosage must be adjusted to individual patient's needs.

Usual Dosage Bentyl 10 mg capsule and syrup: Adults 1 or 2 capsules or teaspoonfuls syrup three or four times daily. Children 1 capsule or teaspoonful syrup three or four times daily. Infants ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg: Adults 1 tablet three or four times daily. Bentyl Injection: Adults 2 ml (20 mg) every four to six hours intramuscularly only. **NOT FOR INTRAVENOUS USE.** **MANAGEMENT OF OVERDOSE** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanechol chloride USP) should be used.

Product Information as of October, 1978.

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Decatur, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.



The Krugerrand. The world's best way to buy gold is here.

Bank it, hide it, or add it to your Keogh Plan. Phone your order direct or have your Keogh manager call us.

KANSAS GOLD & SILVER EXCHANGE

(316) 792-3422

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.

1009 McGee St.

VI 2-4750

KANSAS CITY, MO.

Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215 U.S.A.



Book REVIEWS

DR. FISHBEIN'S POPULAR ILLUSTRATED MEDICAL ENCYCLOPEDIA, by Morris Fishbein, M.D. Doubleday and Company, Inc., New York, 1979. 773 pages. \$14.95.

Morris Fishbein, M.D. — whose name has become nearly as synonymous with American medicine as that of Hippocrates — completed this work shortly before his death in 1976. In 1977 it was published in four volumes; this new edition has been slightly abridged to become a single volume.

Dr. Fishbein's stated purpose in compiling this ambitious work is to help both patient and physician to maintain/restore patient health by helping the patient to an increased understanding of health care dynamics. It is well established, according to Dr. Fishbein, that an informed patient is more cooperative in pursuing health care regimens.

The cross-referencing, a key of terms (prefixes, suffixes, and combining forms), and liberal use of good illustrations combine with straightforward, concise text to present the material in an interesting and easily understood manner.

The content is comprehensive, ranging from *abasia* to *zyme*, from *baldness* to *corns*, and (in the First Aid section) from *Heimlich maneuver* to *emergency childbirth*. Leafing through its pages the reader encounters such intriguing entries as *black hairy tongue*, *hiccups*, *left-handedness*, and *crab lice* interspersed with the routine germs, fractures, diseases, and anatomical inventory. The print is small, but was obviously mandatory to a single-volume edition.

This volume would doubtless be well read in any physician's waiting room; the problem would be to prevent its unauthorized removal. — *E.B.*

THE COURAGE TO LIVE, by Ari Kiev, M.D. Thomas Y. Crowell, Publishers, New York, 1979. 148 pages. \$7.95.

The depression/suicide "iceberg" is a burgeoning public health problem of major gravity in the United

States. The visible tip is comprised of an estimated 25,000 to 50,000 suicides per year plus the depressed thousands who seek professional assistance. The dimensions of the invisible portion — comprised of those whose suicides or attempts at it are not readily recognized, and those who receive no professional help — can only be estimated as of alarming proportions. It appears likely that almost everyone will at some time experience significant contact with its manifestations, either through personal involvement or that of a friend or relative.

Compounding the difficulties of dealing effectively with the problem is the gross lack of understanding by the general public of symptom recognition and assessment and available treatment. Dr. Kiev — former head of the Suicide Prevention Clinic at New York Hospital — draws on extensive psychiatric clinical experience in dealing with the depressed and the suicidal to dispel misconceptions, elucidate treatment modalities, and clarify values and attitudes.

He discusses the causes and outward signs of severe depression and explains the type of reasoning that may help the victim through a crisis. This includes convincing the person that immediate help is available. In this context, Dr. Kiev presents chemotherapy in some detail, explaining its indications, applications, and often dramatic short-term results. He follows this with a clear explanation of the need for psychotherapy as the long-term treatment.

The book includes analyses of the processes leading to depression, as well as those by which reorientation is possible. Dr. Kiev also emphasizes that suicide is not always a swift, one-stroke action, but rather may be an extended process of self-destruction; persons of this type need help just as surely as do their more obvious peers.

The final chapter includes a bit of practical philosophy for everyone. It puts problems and pressures into perspective, and gives concrete suggestions for positive daily living.

(Continued on page 553)

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays (913) 625-7049
H. Ivor Jones, M.D., Shawnee Mission .. (913) 362-4040
Roy Neil, M.D., Hays (913) 628-3215
George M. Penn, M.D., Topeka (913) 234-9566
Ivan Rhodes, M.D., Wichita (316) 685-1291
Alex Scott, M.D., Junction City (913) 238-2518
Max Teare, M.D., Garden City (316) 276-7689
Virginia L. Tucker, M.D., Lawrence(913) 843-3750
Kermit Wedel, M.D., Minneapolis (913) 392-2144

Kansas Medical Society, Topeka (913) 235-2383/235-3619

Generics save money. Big money!

The FTC estimates that \$400 million could be saved annually on the nation's Rx bill if physicians prescribed generics. Are you saving *your* patients extra dollars?

Purepac, America's leading manufacturer of a national brand of generics, would like to show you the tremendous savings possible with just three of our 700 generic products:

DRUG		AVERAGE RX PRICE (100's)	\$ SAVINGS WITH PUREPAC	% SAVINGS WITH PUREPAC
Pavabid Capsules*	150 mg.	\$10.32		
Purepac Papaverine	150 mg.	3.95	\$6.37	61.7%
Equanil Tablets*	400 mg.	8.15		
Purepac Meprobamate	400 mg.	1.85	6.30	77.3%
Librium Capsules*	10 mg.	8.76		
Purepac Chlordiazepoxide HCl.	10 mg.	3.90	4.86	55.4%

*Registered trademarks of Marion Labs., Wyeth Labs., Roche Labs., respectively.

Purepac generics save money. Big money. Purepac is dedicated to providing your patients with quality products that are equivalent to their brand name counterparts at significant savings.

But we can't do it alone. We need your cooperation.

Send for Purepac's *free* Brand Name/Generic Name Reference Chart today. You'll receive an alphabetical listing of brand name drugs with their generic counterparts.

And next time you write a prescription, write for Purepac brand generics. Your patients will know you care.

PUREPAC. Competitive prices and peace of mind.

FREE!

Please send me my FREE copy of Purepac's Brand Name/Generic Name Chart.

Name _____

Address _____

City _____ State _____ Zip _____

Mail to Purepac Pharmaceutical Co.,
200 Elmora Avenue, Elizabeth, N.J. 07207

KM979



PUREPAC

Elizabeth, NJ 07207

THE LEADING NATIONAL BRAND OF GENERICS

Guardian Angels



Short and quick!

Save precious time and lives with the LIFE WATCH helicopter air ambulance that can be on its way to an emergency up to 125 miles away in just three minutes. It can accommodate two patients and a minimum of two skilled medical personnel who maintain direct physician communication. Complete life support equipment is also on board.

Cruising at 120 mph, this helicopter travels more than twice as fast as legal highway speeds. And, of course, it travels in a straight line, without having to follow the zig-zag highway route ... saving even more time.

The LIFE WATCH helicopter from Midwest Piper Flight. Count on it!

Far and fast!

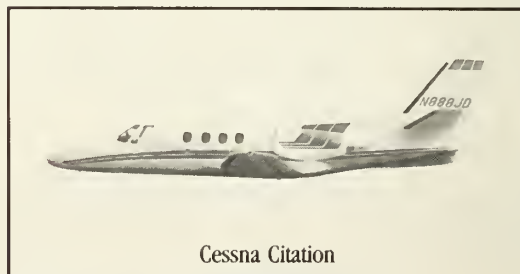
Speeds up to 400 mph dramatically cut travel time to specialized medical facilities. The recent addition of a Cessna Citation jet gives Midwest Piper Flight's ambulance fleet the ability to expand its service nationwide. And a Beech King Air propjet puts almost the whole state of Kansas within an hour's flight of specialized hospital facilities.

The long and short of it is ... Midwest Piper Flight has the air ambulance to meet your needs. Close by and quick ... or far and fast!

Contact your physician, hospital, law enforcement agency or EMS for emergency air ambulance support. For non-emergency air ambulance information, call (316) 682-5551.



Beech King Air

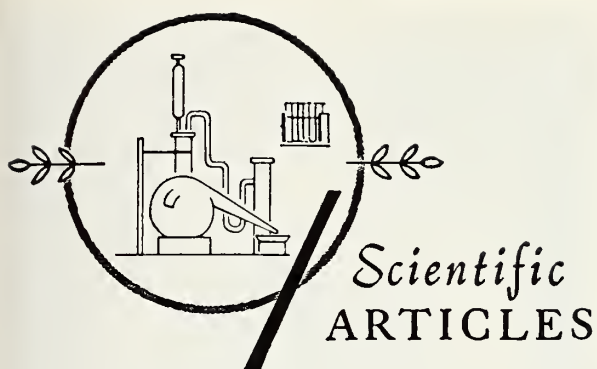


Cessna Citation

This advertisement is paid for by Midwest Piper Flight.

MIDWEST PIPER FLIGHT INC.

Comotara Airport
3512 N. Webb Road
P.O. Box 8067, Wichita, KS 67208
Phone (316) 682-5551



Familial Exostosis

A Follow-up

PAUL H. KIRZ, M.D.;* H. O. MARSH, M.D.;† and
BERNARD T. POOLE, M.D.,‡ Wichita

FAMILIAL EXOSTOSIS was described by Roscoe Morton, M.D., Arkansas City, in a case report published in the December 1975 issue of *The Journal of the Kansas Medical Society*. He described the patient's many social and medical difficulties resulting from this disfiguring inherited disease. The patient had multiple large bony tumors (osteochondromata or exostoses) of all extremities and experienced pain when the tendons moved over them (*Figure 1*). Numerous surgical procedures had been performed to excise these tumors and he had also undergone bilateral total hip arthroplasties for osteoarthritis secondary to this disease. Left total hip surgery was done in February 1974 and the right one in September 1975. The right hip was revised in December 1975. On three occasions — April 1976, March 1977, and May 1977 — the patient was admitted to Wichita hospitals for work-up and treatment of an osteochondroma that had degenerated into a chondrosarcoma. Presented here is a follow-up to Dr. Morton's article.

Osteochondromata are predominantly osseous,

* Orthopedic Resident, St. Francis Hospital Orthopedic Residency Program, Wichita.

† Clinical Associate Professor, Department of Orthopedics, University of Kansas School of Medicine-Wichita; Director of Orthopedic Residency Program, St. Francis Hospital, Wichita.

‡ Orthopedic Surgeon, Wichita.

Address reprint requests to Dr. Kirz, Apt. 1E, 218 E. 74th St., New York, NY 10021.

but are chondrogenic in origin. They usually become manifest in adolescence or childhood and grow by endochondral ossification of their cartilaginous cap. They are most often found in the metaphyseal area of a long tubular bone but may occur in any bone that develops by endochondral ossification. Solitary os-

Familial exostosis is a condition resulting in painful, disfiguring bony tumors, often necessitating extensive surgery. Presented here is a follow-up of a case originally discussed in *The Journal* in 1975.

teochondromata are common benign skeletal neoplasms and do not follow any known pattern of inheritance. In contrast, multiple osteochondromata (familial exostoses) are much less common and are inherited in an autosomal dominant pattern. Dahlin, who reported on over 6,000 bone tumors seen at the Mayo Clinic, noted that osteochondromata (both solitary and multiple) comprise 40 per cent of benign bone neoplasms and 9.3 per cent of his total series. Ninety per cent were solitary lesions which seldom became malignant. Dahlin noted a malignant change in 4.1 per cent of solitary osteochondromata¹ and Lichtenstein in 1-2 per cent of his cases of solitary lesions.² This is probably higher than the true incidence of malignant change as both authors see a high



Figure 1. Photograph of the patient. Note bony masses over most of the major joints.

percentage of referred difficult cases. However, in multiple familial exostosis, Dahlin reports the secondary development of chondrosarcoma in 24 of 87 cases or 27.6 per cent, while Jaffe found 3 of 28 cases or about 11 per cent.³ When these tumors undergo malignant change, they usually become chondrosarcomas, although a few become osteogenic sarcomas or fibrosarcomas. The most



Figure 2. A-P X-ray of patient's pelvis at the time of his first total hip 2/74. Note the osteochondromata in both proximal femurs and the left iliac crest.



Figure 3. Oblique X-ray of osteochondroma on left iliac crest 2/74.



Figure 4. A-P X-ray of patient's pelvis when first biopsy of left iliac crest chondrosarcoma was made 4/76. Note bilateral total hips.

common location of these tumors which undergo sarcomatous change is the innominate bone. Thirteen of Dahlin's twenty-four chondrosarcomas secondary to familial exostosis were in this bone.

Our patient — a 44-year-old male — was hospitalized in April 1976 because of a left iliac crest exostosis which had been enlarging for four months. (See pre-operative x-rays in Figures 2-5.) The patient estimated it had increased approximately four-fold in size. The lesion caused no great discomfort and clinically measured 13 cm x 11 cm x 4 cm. An excisional biopsy was performed as it was impossible to make an en bloc excision due to the extensive iliac crest involvement and proximity to the acetabulum. The pathologic diagnosis was a low grade chondrosarcoma.

It was elected to follow this patient and remove more of the chondrosarcoma if the need arose for the following reasons: First, patients with chondrosarcomas arising from familial exostosis have a relatively good prognosis for longevity. McKenna, *et al.* reported a 66.7 per cent five year survival rate regardless of therapy or tumor grade in their 12 patients.⁴ Second, adequate excision of this neoplasm could have been accomplished only by a hind quarter amputation. This probably would have resulted in an inability to walk and certainly would have entailed severe disfigurement. Third, the medical problems of severe chronic obstructive pulmonary disease and chronic ethanol abuse with hepatic damage could result in his death before the patient succumbs to the chondrosarcoma.



Figure 5. Oblique X-ray of chondrosarcoma on left iliac crest 4/76, compare to Figure 3 and note the change in size of this lesion over a 26 month period.

The neoplasm continued to grow slowly and in March 1977 he underwent a second partial excision of the chondrosarcoma in Arkansas City. Subsequently, the patient was hospitalized in Wichita for further work-up and a metastatic survey was negative. Two months later he underwent a third partial excision of the chondrosarcoma. All pathologic examinations have reported a chondrosarcoma of low grade malignancy. The patient has had no further excisions of this tumor although he has had several hospital admissions for treatment of medical problems.

We have brought the readers of *The Journal of the Kansas Medical Society* up to date on a patient originally presented by Dr. Roscoe Morton in December 1975. This patient's family tree was constructed with the cooperation of several family members (Figure 6). To the best of their knowledge, no other family members have ever had a malignant change in an exostosis.

Sudden Death Syndrome

Reports of 16 Patients on High Doses of Phenothiazine

CHIH-PING YANG, M.D. and RAMON A. GUILLAN, M.D., Topeka

SUDDEN DEATH syndrome may occur in patients on high doses of phenothiazines without any preceding observable picture of phenothiazine cardiomyopathy.¹⁻⁵ Since 1957, 16 patients have died suddenly in this institution. These patients were relatively young and were receiving high doses of phenothiazine — 400-4000 mg/day — for a minimum of 12 months duration. They presented with various clinical states, but with a common conclusion — “sudden death.”

Case Reports (Table I)

Case One: A 49-year-old male was referred to this hospital on June 15 with a diagnosis of chronic paranoid schizophrenia. The patient had carried this diagnosis since the age of 30. He failed to improve during several previous hospitalizations elsewhere. His psychiatric status deteriorated; his violent behavior intensified. His symptoms were improved with Thorazine one gm bid with additional prn doses. An attempt to decrease the Thorazine doses was followed by relapse and deterioration of psychiatric status; large doses of Thorazine were therefore continued. The patient had no history of cardiac disease and cardiogram was normal on admission. In September 1975, three months after hospitalization, the patient was found apneic, cyanotic, pulseless, and unresponsive. Cardiopulmonary resuscitation failed to save the patient. Cardiac monitor revealed slow idioventricular rhythm. Autopsy disclosed a heart weight of 570 gm with normal coronary artery and no pulmonary embolism. Quantitation of phenothiazine content revealed 1.9 mcg/gm of cardiac tissue.

Case Two: A 54-year-old male was admitted in April of 1976 with a diagnosis of chronic schizophrenia. Physical evaluation was within normal limits including normal cardiogram and chest x-ray on admission. The patient was doing well on Thorazine, 1 gm twice a day until 18 months later, when he was found unconscious, cyanotic, and non-responsive. The patient was declared to have

sudden death syndrome, possibly caused by cardiac arrhythmia followed by cardiac arrest of undetermined cause. Autopsy disclosed no head injury, no myocardial infarction or pulmonary embolism. Quantitation of phenothiazine content revealed 0.61 mcg/gm of cardiac tissue.

Sixteen relatively young patients under age 54, who received phenothiazine 400 mg to 4000 mg/day for a minimum of 12 months died suddenly. All 16 were autopsied. Grossly, the findings were consistent with cardiogenic shock. Electromicroscopy revealed damage at the cardiac ultrastructure; quantitation of phenothiazine content in six patients ranged from 0.61 mcg to 4.31 mcg/gm of cardiac tissue mass. No myocardial infarction or pulmonary embolism were found. It is thought that this sudden death syndrome was due to fatal cardiac arrhythmia secondary to phenothiazine damage of the cardiac ultrastructural apparatus. Pathogenesis and mechanism are proposed and discussed.

Case Three: A 55-year-old male with a diagnosis of chronic schizophrenia was admitted in June 1975. Initial medical evaluation was unremarkable except for a non-specific ST-T change in his cardiogram. The patient received Thorazine 400 mg/day and Stelazine 15 mg/day. The patient was described as cooperative and well compensated until 27 months later when he was found lying unconscious with shallow breathing and no blood pressure obtainable. Cardiopulmonary resuscitation failed to save the patient. Autopsy disclosed no head injury, no myocardial infarct or pulmonary embolism. Quantitation of phenothiazine content revealed 0.69 mcg/gm of cardiac tissue.

Case Four: A 44-year-old male was diagnosed with chronic paranoid schizophrenia. The patient began receiving Thorazine 400 mg/day in 1971. The

Address reprint requests to Dr. Yang, Department of Medicine, V.A. Medical Center, Topeka, KS 66622.

TABLE I

<i>Patient No.</i>	<i>Age/Sex</i>	<i>Drug Intake at Time of Death</i>	<i>Duration of Drug Intake</i>	<i>Mode of Death and Clinical Picture</i>	<i>Autopsy Findings</i>	<i>Quantity of Phenothiazine in Cardiac Tissue Mcg/gm Cardiac Tissue</i>
1	49 Male	Thorazine 2 gm to 4 gm/day	Smaller dose long-term — Massive doses for the last 5 mos	Sudden death — no foreseen clinical cardiomyopathy	Heart 570 gm, coronary artery normal, no MI, no pulmonary embolism	1.9
2	54 Male	Thorazine 2 gm/day	16 mos	Sudden cardiac arrest	Heart 375 gm, coronary artery normal, no MI, no pulmonary embolism	0.61
3	55 Male	Thorazine 400 mg/day Stelazine 15 mg/day	27 mos	Sudden death no preceding clinical cardio-myopathy	Heart 260 gm, coronary artery normal, no MI, no emboli	0.69
4	44 Male	Thorazine 400 mg/day	48 mos	Heart failure	Heart 590 gm, diffuse endocardial and myocardial fibroelastosis	
5	43 Male	800 mg/day	Long term (more than 12 mos)	Unforeseen cardiac arrest	Heart 260 gm, coronary artery normal, no MI, no emboli	4.31
6	54 Male	400 mg/day	More than 5 yrs	Unforeseen cardiac arrest	Heart 460 gm, coronary artery normal, no MI, no emboli	1.25
7	45 Male	Thorazine 100 mg IM Mellaril 100 mg po qid	Off and on for several yrs	Sudden apnea and generalized convulsion	Heart 275 gm, coronary artery normal, no MI, no emboli	4.3
8	52 Female	Thorazine 400 mg/day	24 mos	Unforeseen cardiac arrest	Heart 260 gm, coronary artery normal, no MI, no emboli	

patient presented no clinical illness and remained mentally compensated from 1971 through 1974. In 1975, after 48 months of Thorazine therapy, the patient was found to have progressive cardiac dyspnea and intractable cardiac failure which responded poorly to treatment. The patient died, and autopsy disclosed diffuse fibroelastosis of the endocardium and myocardium. Phenothiazine cardiac effect was speculated. Phenothiazine quantitation was not performed.

Case Five: A 43-year-old male with psychosis manifested by irritability, hallucinations and bizarre behavior, with no history of cardiovascular disease, received Thorazine 800 mg/day for more than 12

months. Unexpectedly, he was found sitting in bed, cyanotic with fixed dilated pupils. Autopsy disclosed no myocardial infarction or pulmonary embolism. Quantitation of phenothiazine revealed 4.31 mcg/gm of cardiac tissue. Electron microscopy indicated damage on the cardiac ultrastructural level, including mitochondria, sarcoplasmic reticulum, T system and Z-band apparatus.

Case Six: A 54-year-old male suffered from paranoid schizophrenic reaction and had received Thorazine 400 mg/day for more than five years. He developed unforeseen cardiac arrest. Autopsy disclosed no myocardial infarct or pulmonary embolism. Quantitation of phenothiazine revealed 1.25

mcg/gm of cardiac tissue. Electron microscopy revealed similar ultrastructural damage.

Case Seven: A 45-year-old male with no history of cardiovascular disease, carrying a diagnosis of chronic anxiety, received Thorazine 100 mg intramuscularly prn with additional Mellaril 400 mg/day intermittently for several years. He suddenly developed apnea and generalized convulsions. Autopsy revealed no myocardial infarct or pulmonary embolism. Quantitation of phenothiazine revealed 4.3 mcg/gm of cardiac tissue. Electron microscopy revealed similar swelling of mitochondria, and disruption and disappearance of mitochondrial cristae.

Case Eight: A 52-year-old female with chronic schizophrenic reaction received Thorazine 400 mg/day. Twenty-four months later she was found gasping and no pulses or blood pressure could be obtained. Autopsy disclosed sudden death of undetermined cause, probably phenothiazine related. Quantitation of phenothiazine in the cardiac tissue was not performed.

Discussion

All 16 patients who died suddenly were autopsied; six patients had cardiac phenothiazine quantitation; and three had electromicroscopy studies. On autopsy, grossly and electron microscopically, they presented similar characteristics. Grossly there was severe passive congestion of lung, liver, and brain consistent with cardiogenic shock. Electron microscopically there were severe mitochondrial pleomorphism, intracytoplasmic edema, loosening of myocardial fiber structure and widening of Z-band spaces.^{6,7} Now let us ask: What is the cause of sudden death syndrome? The most acceptable answer would be that it is due to "electrical death" — namely fatal cardiac arrhythmia. What is the underlying pathogenesis of this cardiac arrhythmia? Could the cardiac ultrastructural damage trigger the cardiac arrhythmia, and if so, what is the mechanism? To answer the above questions, we performed an experimental investigation: Twenty-four control rabbits and 41 experimental rabbits received 50 mg of phenothiazine/kgm of body weight intraperitoneally for five days and the animals were then killed. The electrolyte content of the cardiac tissue and the serum of the experimental group were as follows: There was a decrease of calcium, potassium and chloride, and an increase of sodium concentration in the cardiac tissue; there was decreased sodium, calcium, and chloride with increased potassium concentration in the serum.⁸

This study concluded that there is an electrolyte shift in serum and cardiac tissue of rabbits with acute

phenothiazine intoxication. It has been recognized that sarcoplasmic reticulum is the primary storage site and mitochondria the secondary storage site for calcium uptake and storage. With the injury at the sarcoplasmic reticulum and mitochondria, the calcium uptake and storage become impaired. In turn, cardiac muscular contraction was impaired. With diffuse myocardial fiber degeneration, the ATP energy production and membrane Na+K+ activated ATPase activity was impaired. The sodium pump which required ATP energy for active transport became deranged. Sodium could not be pumped out from intracellularly to extracellularly against the gradient, resulting in Na+ accumulation intracellularly, similar to that observed in sick cell syndrome. With this disorderly distribution of Na+, K, and calcium, the mechanism of action potential became disturbed, cardiac contraction as well as cardiac rhythm in turn became deranged.

Could we foretell the coming of sudden death syndrome? We could not give a satisfactory answer. The experimental rabbit presented no observable abnormal signs on the first four days. Five rabbits died suddenly on the fifth day.⁸ We can only recommend — as previously reported — the screening of the phenothiazine antibody and cardiograms every six months⁹ and use of minimal phenothiazine doses or alternate medication if cardiac antibody becomes positive or EKG becomes abnormal.

Conclusion

The unforeseen sudden death syndrome in patients on high doses of phenothiazine was most likely caused by electrical death — namely fatal cardiac arrhythmia. Phenothiazine induced damage at the cardiac ultrastructural level — sarcoplasmic reticulum, mitochondria, T system, Z-band, and myocardial fiber — which in turn resulted in the electrolyte shift with decrease of intracellular calcium and potassium and intracellular accumulation of sodium in the cardiac tissue. This disordered distribution of cardiac electrolytes resulted in disordered action potential, and fatal cardiac arrhythmia thus occurred. At present we do not have satisfactory procedures to foresee and prevent sudden death syndrome; however, we would suggest that patients on high doses of phenothiazines have a phenothiazine antibody screening test and electrocardiogram every six months. If either is found to be abnormal, alternate medication is indicated.

The phenothiazine cardiac toxic effect seems to be cumulative, dosage and duration both play a role,

(Continued on page 563)

Thermal Injuries

Assessment and Treatment for Outpatient Care

DAVID KRIER, MSPH; and MANI M. MANI, M.D., Kansas City

THERMAL INJURIES are estimated to occur in this country at the rate of more than 2 million/year, and 100,000 of these require hospitalization. Much has been written about the pre-hospital and hospital care of thermal injuries. Although 100,000 admissions/year is an appallingly high figure, it represents only 5 per cent of all thermal injuries. The overwhelming majority of minor injuries can be treated adequately and effectively on an outpatient basis.

The American Burn Association has categorized thermal injuries as minor, moderate, and major.

Minor: Second degree burns of less than 10 per cent body surface area (BSA) in children, 15 per cent BSA in adults with less than 2 per cent third degree burns, not involving eyes, ears, face, hands, feet, perineum. Excludes electrical injury, complicated injuries, inhalation injury, and all poor risk patients.

Moderate: Second degree burns of 10-20 per cent BSA in children, 15-25 per cent in adults with less than 10 per cent third degree burns and not involving eyes, ears, face, hands, feet, and perineum. Excludes electrical injury, complicated injuries such as fractures, inhalation injury, and all poor risk patients.

Major: Second degree burns of greater than 20 per cent BSA in children, 25 BSA in adults; all third degree burns 10 per cent BSA or greater; all burns involving the hands, face, eyes, ears, feet, perineum; all inhalation injuries, electrical burns and complicated injuries involving fractures or other major trauma; all poor risk patients.

Generally, minor burns can be managed on an outpatient basis while some patients with moderate and all with major burns should be hospitalized.

Evaluation

The decision regarding ambulatory or hospital care should be made early. Factors determining this decision are the extent, depth, location of injury, injury or damage to other systems, age of the patient, and pre-existing or complicating medical conditions.

Figure 1 shows the guidelines for this decision-making process.

Extent of Burn — BSA

The common method for estimating the area of injury is the "Rule of Nines." This is an effective method of estimating the body surface area in adults.

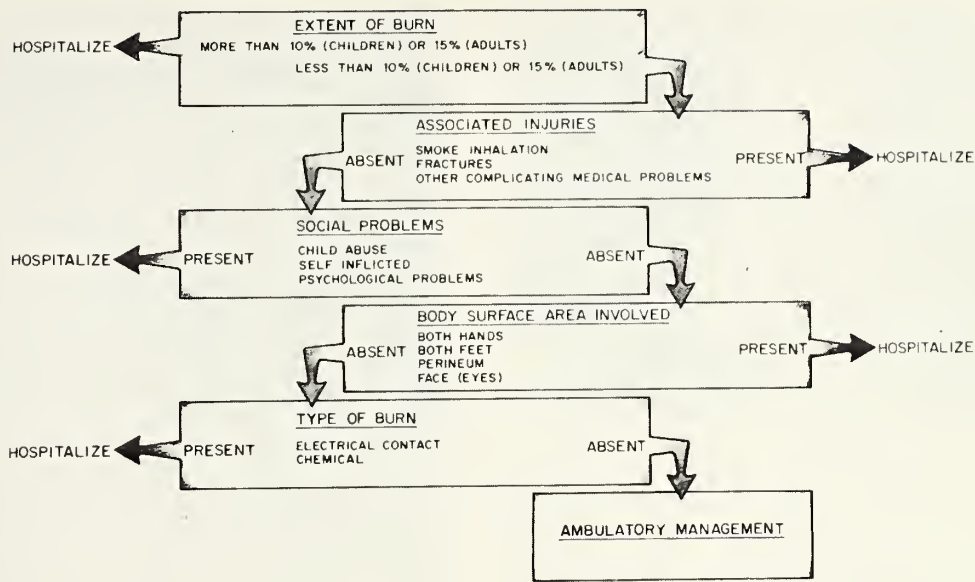
A large percentage of thermal injuries can be treated on an outpatient basis. All such wounds should be accurately assessed during first aid treatment. Criteria for this assessment and outpatient management of these injuries are discussed in detail.

If this is used in children, the invariable defect is over-estimating the burn surface area. The Lund and Browder chart (*Figure 2*) shows a more accurate method of documenting the extent of body surface area burned.

Depth of Burn

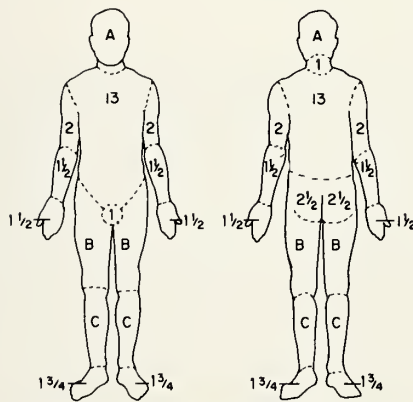
Skin injury generally is classified into first, second, and third degree injury. *Figure 3* illustrates the anatomical differentiation between the various degrees of thermal injury. First and second degree burns are partial thickness injuries and should heal spontaneously with adequate care within two to three weeks. Third degree burns, on the other hand, are full thickness injuries, where spontaneous healing may not take place or may take an inordinate amount of time. Clinical findings of blisters, pain, and adherence of hair have been mentioned as the diagnostic guidelines for a second degree burn; loss of hair, loss of sensation, and coagulated blood vessels have been mentioned as evidence of third degree injury. Initial evaluation may not always be accurate, and a partial thickness injury can convert to a full thickness injury if the burn wound becomes infected or if the patient develops other complications. With this in mind it is generally considered that any burn that has not re-epithelialized satisfac-

Address reprint requests to Dr. Mani, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.



DAVID KRIER, MSPH MANI M. MANI, MD
 THE UNIVERSITY OF KANSAS MEDICAL CENTER

Figure 1. Guidelines used in making the decision to hospitalize a burn patient versus outpatient care.



RELATIVE PERCENTAGE OF AREAS AFFECTED BY GROWTH

	AGE IN YEARS					
AGE	0	1	5	10	15	ADULT
A-1/2 OF HEAD	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2	3 1/2
B-1/2 OF ONE THIGH	2 1/4	3 1/4	4	4 1/4	4 1/2	4 3/4
C-1/2 OF ONE LEG	2 1/2	2 1/2	2 3/4	3	3 1/4	3 1/2

Figure 2. Lund and Browder charts. These charts permit a rather accurate method for determining percentage of body surface involved.

DEPTH OF BURN

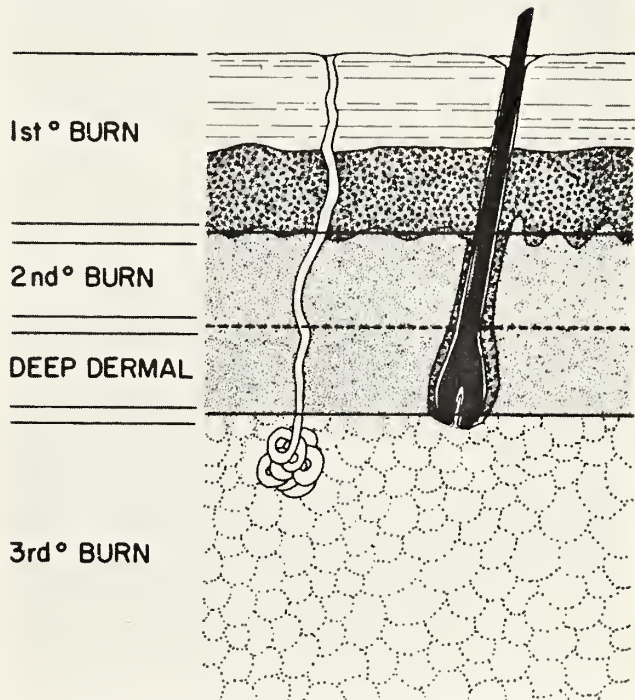


Figure 3. Schematic representation of skin cross-section. First and second degree burns are partial thickness, while third degree is full thickness.

torily at the end of two to three weeks should be considered as a full thickness injury and treated accordingly.

First Aid

The primary thrust of burn first aid is to separate the patient from the source of injury in order to prevent extension of the area and the depth of tissue damage. Specific protocols for burn injury first aid may be found in the MARCER Manual.¹ Following first aid in the field, all patients should be transported to the nearest medical facility for further evaluation and a decision as to in-hospital or out-patient care.

Care of the Burn Wound

After a firm decision has been made to treat the patient on an out-patient basis, the extent and the depth of the burn wounds are documented. The primary aim in the out-patient care of thermal injury is care of the burn wound until adequate healing has transpired. After the initial assessment, the burn wound should be thoroughly cleansed and debrided. This is most easily accomplished by immersion in water of a comfortable temperature in a suitable container. Antibacterial soap such as hexachlorophene or povidone iodine may be used. Pain relief with meperidine hydrochloride or morphine sulfate is necessary during this procedure. A general anesthetic is seldom required. Aggressive debridement including removal of all foreign material, blisters, and wound drainage should be performed. If blisters are intact, they may be left as biologic dressings. However if a blister is ruptured, or is hemorrhagic, or purulent, the entire blister should be removed. After thorough cleansing, a wound culture is obtained during the initial visit.

Since burn wounds are highly susceptible to infection with frequent complication of extension of the depth of the lesion, a suitable antibacterial dressing must be provided for the properly debrided wound. Many compounds are available, such as silver nitrate, nitrofurazone, silver sulfadiazine, povidone iodine, mafenide acetate, and the triple antibiotic ointments. Obviously the choice of antibacterial dressing is largely a matter of personal experience and subjective evaluation. Factors to be considered are pain of application, ease of dressing removal, antibacterial effectiveness, staining of clothing, and individual hypersensitivity to the ingredients. The antibacterial ointment or cream is best held in place with a dry dressing. The bandage aids in retention of the topical antimicrobial to the burn wound and also provides a certain amount of pressure and splinting. Burn injuries in areas of the face

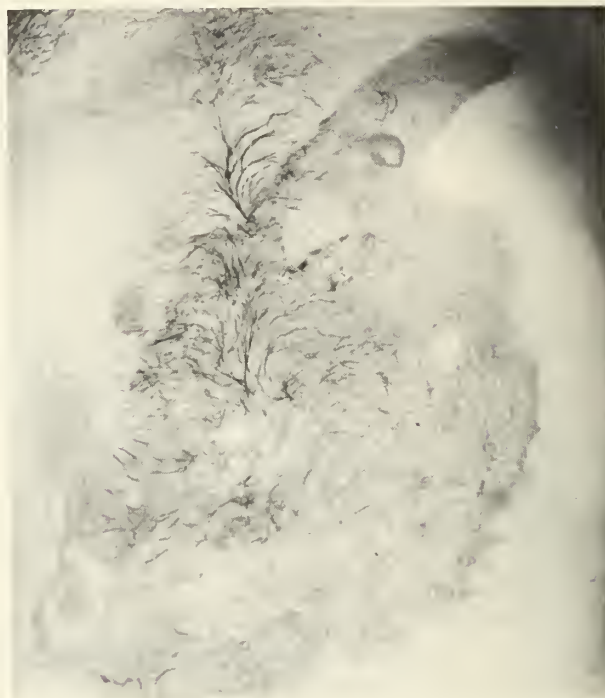


Figure 4. Well defined scald-type injury typical of many burns successfully managed in an outpatient setting.

and perineum are best left open with frequent cleansing and application of the topical antimicrobial.

After adequate care of the burn wound is achieved, the patient should be given tetanus prophylaxis, antibiotics if indicated, and pain medication to be taken at home.

Dressing Changes

Burn wounds treated on an outpatient basis should have the dressing changed daily — or at least every other day — so they can be further cleansed and debrided and have the antimicrobial agent replaced. Healing can be assessed at these times and wound cultures repeated. As the healing progresses and re-epithelialization becomes more complete, the area of the dressing can be decreased and office visits for dressing changes can become less frequent. The bandage changes may be discontinued altogether when re-epithelialization is complete.

Maintenance of Function

Patients incurring even minor burns can sometimes suffer significant long-term morbidity from compromise of function and disfiguring scars. Specific therapy for these complications can often be carried out on an outpatient basis and measures must be taken early in the course of treatment to minimize these risks.

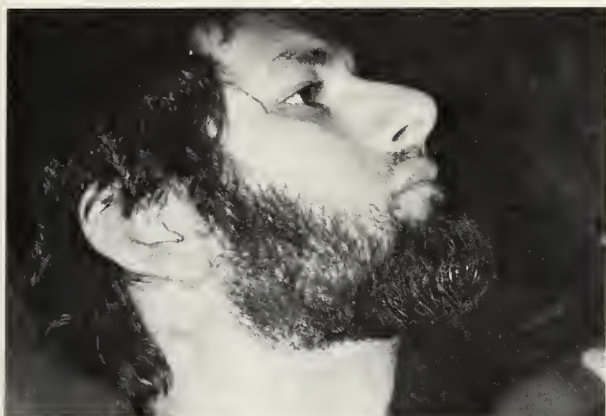


Figure 5. Minor thermal injury on neck suitable for outpatient management.



Figure 6. Same patient as Figure 5, showing complete healing and excellent cosmetic result after proper ambulatory care.

Burns involving joints must be immobilized during healing in such a manner as to prevent undue contractures as scars form. Splints may be fashioned from plaster of paris or the newer plastic materials and the patient instructed to remove the splints at least three times a day and go through the full range of motion. Since the scars do not mature for many months, it may be necessary for the patient to wear this splint primarily during periods of inactivity such as at night. Hypertrophic scars and keloids are another complication frequently encountered in burns. It has been conclusively shown that constant elastic pressure can prevent and correct burn scar hypertrophy.²

Summary

Most burns covering less than 15 per cent (10% BSA in children) can be successfully managed on an outpatient basis. After initial first aid measures and accurate assessment of the extent of burn wound, manageable burns are aggressively debrided and cleansed. The more complex or extensive injuries should be hospitalized or transported to special burn care facilities. When the burns are clean, the wounds should be protected with a suitable antimicrobial agent and occlusive dressings. This treatment should be continued until complete epithelial healing is obtained. Scar maturation continues for up to 18 months during which time careful attention should be paid to maintenance of function and cosmetic appearance.

References

1. Mid-America Regional Council Emergency Rescue, Inc., Kansas City Metropolitan Region, *Pre-Hospital Treatment Protocols for Paramedic Personnel*, p. 13, March 1978.
2. Mani, M. M.; Robinson, D. W.; Masters, F. W. and Ketchum, L. D.: Burn update. *J. Kans. Med. Soc.* 79:118-120, 1978.

Book Reviews

(Continued from page 539)

The appendices list "Guidelines for Patients on Chemotherapy" and "Guidelines for Choosing a Psychotherapist."

The book is essentially a tool for increased understanding; it also defines criteria indicative of the need for professional services. It would no doubt be of value to a depressed-suicidal person, could he/she have access to it at the proverbial psychological moment; its more significant value is for those who might come in contact with such a person, *i.e.* anyone. — *E.B.*

Case Reports

BASAL GANGLIA CALCIFICATION: AN EFFECT OF LONG-TERM PHENOTHIAZINE THERAPY

Basal ganglia calcification associated with calcification of cerebellar roof nuclei is a rare disorder. The deposit, containing iron and calcium, represents a predominant pericapillary deposition of a basophilic substance containing mucopolysaccharides.¹ The causes of intracerebral calcification are many, and vary from the idiopathic group to hypoparathyroidism, toxoplasmosis, tuberculoma, encephalitides, cysticercosis, vascular lesions and brain tumor, intoxication with lead and associated with idiopathic extodermal dysplasia,²⁻⁷ all of which have been reported.

Clinically these patients manifest parkinsonism that is usually resistant to L-Dopa therapy, mental retardation, seizure, and dystonia. Basal ganglia calcification from long-term phenothiazine therapy is rare. The purpose of this paper is to report a case of basal ganglia calcification resulting from long term phenothiazine therapy, and to discuss its pathophysiology.

Case Report

A 64-year-old black male was referred to Neurology Service for evaluation of a severe movement disorder. The patient had been diagnosed to have chronic undifferentiated schizophrenia 15-20 years earlier, and had been treated with the phenothiazine group of drugs during the past 15 years. Recently he experienced two episodes of generalized seizures. Past history and family history were unremarkable. Neurological examination revealed the patient to be alert but with memory impairment for both recent and remote events. Comprehension for complicated command was defective. The cranial nerves were normal. The patient was found to have Grade IV akathisia. Skull and long bones appeared normal on x-ray; computerized axial tomography scan revealed calcification of the right basal ganglia and dentate nucleus on the left side (Figure 1). EKG and electroencephalogram were normal. Serum calcium, phosphorus, and other chemistries were normal, as were CBC and spinal fluid. Parathormone loading test and cyclic amp measurement, and serum and urine calcium all were unremarkable.

Discussion

The drugs of the phenothiazine group are effective major tranquilizers. Since their introduction in the treatment of schizophrenic patients, they have changed the life-style of psychiatric patients. Since millions of doses are now prescribed, it is not surprising that many side effects of these drugs have been reported with increasing frequency.⁸⁻⁹ Various neurological syndromes — such as acute dystonic reaction, akathisia, pseudoparkinsonism, and tardive dyskinesia — have all been well documented in the literature.

Jellinger has described in detail the neuropathological changes in a histological study of 28 brains following long-term neuroleptic treatment.¹⁰ Fourteen of these patients had extrapyramidal symptoms while none were noted in the other 14 cases even though all received neuroleptic drugs. In the study it was shown that the lesions are more common in the group exhibiting various dyskinetic syndromes, and primarily consist of degeneration of nuclei in caudate nucleus, increased glial satellitosis, and cerebral phlebitis. Similar changes in the cerebellar nuclei were also noted.



Figure 1. CAT scan showing calcification of basal ganglia and cerebellar roof nuclei (arrows).

The mechanism of development of brain stones is not clear. Various theories have been suggested to explain the calcification in the idiopathic group. Lowenthal, *et al.*¹ has given a detailed description of various possible mechanisms — changes in vascular permeability, endocrine situation, angioarchitecture, and iron rich areas — under which the final development of striopallido-dentate calcification might be feasible. The development of striopallido-dentate calcification in patients with no parathyroid deficiency constitutes an argument in favor of the theory that generalized disturbance in calcium phosphorus metabolism is not the only answer and that local factors are important. Jellinger¹⁰ has shown phlebitis in basal ganglia, perhaps accounting for changes in vascular permeability and derangement of metabolism in these areas and in cerebellar roof nuclei; thus deposition of calcium and other elements may lead to calcification as seen on computerized tomography scan in these regions.

In the present case, the patient was diagnosed as suffering from schizophrenia 15 years ago, and was treated with thorazine and other major tranquilizers. This resulted in akathisia; the seizure probably occurred as a result of calcification. No evidence of hypoparathyroidism or other abnormalities were noted which could account for calcification of basal ganglia. Local changes in the nuclei in basal ganglia, associated with altered permeability of the blood vessels as a result of phlebitis, resulted in deposition of calcium and other elements in the present case.

Because improved methods of diagnosing this entity are available (computerized axial tomography scan), more future cases will be diagnosed in which long-term therapy with major tranquilizers leads to development of calcification and other irreversible forms of the dyskinetic side effects of these drugs.

Iftekar Ahmed, M.D., Chief, Neurology Service, Veterans Administration Medical Center, Leavenworth, KS 66048.

References may be obtained from the author.

MYOCARDIAL ABSCESS MIMICKING ACUTE ISCHEMIC MYOCARDIAL INFARCT

Abscess may uncommonly develop in the myocardium as a complication of overwhelming sepsis. This paper describes an unusual case of myocardial abscess.

Case Report

A 50-year-old white male was admitted to the intensive care unit following successful cardiac resuscitation. He had long-standing hypertensive cardiovascular disease and insulin-dependent diabetes mellitus. Two years earlier he had entered a hemodialysis program for chronic renal failure secondary to diabetic glomerulosclerosis. He was also receiving L-thyroxine for primary hypothyroidism due to Hashimoto's thyroiditis. On the day of admission, shortly after beginning hemodialysis, the patient became unresponsive and was diaphoretic. Blood pressure was 80/60 and falling. Cardiac monitor showed ventricular tachycardia. Cardiac activity was restored with external cardiac massage, intravenous calcium chloride and sodium bicarbonate, and electric counter-shock. Dialysis was continued for three hours; then the patient was transferred to the intensive care unit. The electrocardiogram revealed a normal rhythm at a rate of 85; the PR interval and the QRS duration were normal; the ST segments were markedly (4-5 mm) depressed in the anterolateral leads; and the T waves were inverted in these leads. The blood sample taken prior to resuscitation was measured for creatine phosphokinase (CPK) and found to be 135 units with significant increase in MB fraction. Serum enzymes on the following day were: glutamic oxalacetic transaminase, 72 units; lactic dehydrogenase, 418 units; and the CPK, 430 units with 13 per cent MB fraction. Subsequent electrocardiograms showed similar but less pronounced changes. The patient had been afebrile until the fifth hospital day when he spiked a temperature of 39.4 C. No source of sepsis was apparent. Hemoglobin was 7.3 gm/100 ml; WBC, 6,600 with 71% segmented neutrophils and 14% band neutrophils. He remained febrile for only 24 hrs. After ten days in the hospital, the patient and his family decided that no hemodialysis or other temporary measures should be continued, and he died on the twelfth hospital day.

Autopsy revealed an enlarged heart weighing 750 gm. There were areas grossly similar to myocardial infarction 8-10 days old in the anterior and septal portions. However, microscopic examination showed extensive abscess formation throughout the anterior wall of the left ventricle and the septum (*Figure 1*). Gram stain revealed the organism to be gram-positive cocci. There was no evidence of myocardial infarction, recent or old. Due to the clinical impression, as well as the gross examination of the heart, the patient was thought to have acute myocardial infarction and no blood culture was taken at autopsy. Dissection of the coronary arteries revealed only mild to moderate degree of atherosclerosis without significant occlusion. The kidneys showed advanced intercapillary glomerulosclerosis. There was focal interstitial fibrosis as well as focal acute and chronic pyelonephritis.

Discussion

The incidence of myocardial abscess discovered at autopsy varies from 0.18-1.52 per cent.¹⁻⁵ In half of the 100 cases reviewed by Tenant and Park,⁶ the abscess was an incidental finding associated with generalized pyemia. About a quarter of them developed as a result of direct extension from subacute bacterial endocarditis. Development as a complication of myocardial infarction was rare. These abscesses are usually clinically silent and may easily be overlooked at autopsy.⁵ Recently there were two reports of diagnosis and successful management



Figure 1. Interstitial myocarditis with abscess formation, clumps of gram positive cocci (arrow); myocardial fibers are well-preserved.

of myocardial abscess.^{7, 8} Both patients had infective endocarditis. The first case was diagnosed by a positive gallium scan. The second case developed advancing degrees of atrioventricular and bundle branch block and pericardial effusion prompting surgical intervention.

In our patient, the electrocardiographic changes and the serum enzyme elevations, suggestive of ischemic infarct, were probably due to myocardial damage from the infiltrating abscesses. About two weeks prior to this hospitalization, the patient was seen for staphylococcal skin infection. This may or may not have been the initial process. The myocardial abscesses probably arose from bacteremia from the foci of pyelonephritis. Diabetes mellitus and chronic hemodialysis might predispose the patient to infection.

Vanee Wongsurawat, M.D.; Robert D. Porter, M.D.;
Nirandon Wongsurawat, M.D.; and Ramon A. Guillan,
M.D., Departments of Medicine & Pathology, Veterans
Administration Medical Center, 2200 Gage Blvd., Topeka,
KS 66622. (Address reprint requests to Dr. V. Wongsurawat.)

* Director, Nephrology Section, St. Francis Hospital, Topeka.

References may be obtained from the authors.

SALT RESTRICTION FOR THE TREATMENT OF MILD HYPERTENSION

It has generally become well accepted that salt restriction plays an important role in the therapy of many patients with various forms of hypertension.^{1, 2} Nevertheless, considerable disagreement remains concerning the efficacy of such treatment. There are, for example, conflicting reports suggesting that increased sodium chloride intake increases blood pressure in some patients^{3, 4} and not in others,^{5, 6} while restriction of dietary salt reduces blood pressure in some patients^{7, 8} and not in others.⁹ Such differences may relate to individual genetic sensitivities to salt. Recently, we evaluated a child with significant hypertension secondary to unilateral renal disease. Although nephrectomy initially appeared to be curative, we were alarmed to



Figure 1. Intravenous pyelogram; note cortical thinning of upper and lower poles — right kidney.



Figure 2. Renal arteriogram; note tortuous vessels of upper and lower poles — right kidney.

observe a gradual increase in systolic and diastolic blood pressure during the first postoperative month. Her blood pressure remained mildly elevated on a regular diet at home during the next two months. However, by simply decreasing the child's salt intake, her blood pressure decreased to postoperative levels during the ensuing two months and remained normal thereafter. Since salt restriction is a relatively simple maneuver that may successfully lower blood pressure, it would seem appropriate to institute such therapy in patients with mild hypertension before resorting to various drug regimens.

Case Report

A nine-year-old white female was evaluated for hypertension following a five-year history of urinary tract infections (UTI). At age four years she had documented UTI with *E Coli* as the causative agent. At that time an intravenous pyelogram showed caliectasis of the upper pole of the right kidney with a completely normal left kidney. One year later, the right kidney showed evidence of pyelonephritis (decreased cortex in the upper pole) with ureteropelvic obstruction, but a voiding cystourethrogram did not reveal ureteral reflux. Blood pressure at that time was 95/60 mm Hg. The child was treated intermittently with suppressive doses of antibiotics and during the next four years occasional urine cultures were obtained which remained negative for bacterial growth. Blood pressure determinations during those years were not reported, and it was only during an elective readmission at age nine years for tonsillectomy that an elevated blood pressure was observed (140/98 mm Hg). Treatment was begun with hydralazine and the child was then referred for further evaluation.

At the time of admission we found the following: height, 147 cm; weight, 38.8 kg; heart rate, 124 beats/min; respiratory rate, 24/min; blood pressure, 150/110 mm Hg; and temperature, 37 C. The general physical and neurological examinations were otherwise normal. Laboratory values included: hemoglobin, 13.5 gm/dl; hematocrit, 39.8%; WBC, 6400; sedimentation rate, 15 mm/hr. Serum chemistry values in mEq/liter were sodium, 137; potassium, 4.2; chloride, 101; bicarbonate, 23; in mg/dl were calcium, 9.6; phosphorous, 4.6; uric acid, 4.1; blood urea nitrogen, 14; serum creatinine, 0.8; and in gm/dl were total protein, 7.6; and albumin, 4.8. Urinalysis showed no protein; 0-2 red blood cells/hpf; 50-100 wbc/hpf; and occasional wbc casts. Repeated urine cultures were negative for bacterial growth. Creatinine clearance was 91 ml/min/1.73 m²; urine catecholamine excretion was 37 mg/24 hrs (normal). Chest roentgenogram was normal, and an intravenous pyelogram showed right sided caliectasis with decreased cortical thickness in the upper and lower poles as well as a normal kidney on the left (Figure 1). A voiding cystourethrogram showed reflux into the right renal pelvis. A renal arteriogram demonstrated a single renal artery with narrow, tortuous and irregular intrarenal vessels in the superior and inferior poles of the right kidney (Figure 2). The arterial system on the left was normal. A renal scan showed remarkably similar function bilaterally. Bilateral renal vein renin determinations revealed a right renal vein renin to inferior vena cava renin ratio of 1.33:1. A right nephrectomy was performed and blood pressure dropped to normal three days after removal of the scarred kidney. The small, scarred kidney weighed 60 grams. Both poles contained broad-based scars. Light microscopy revealed multiple areas of cortex and medulla that contained prominent interstitial fibrosis with lymphocytic infiltration, tubular atrophy, vascular sclerosis, and glomerular obsolescence consistent with chronic pyelonephritis (Figures 3, 4).



Figure 3. Light microscopy photomicrograph of renal cortex with prominent vascular sclerosis, tubular atrophy, interstitial fibrosis and lymphocytic infiltration. Hematoxylin and eosin stain. $\times 80$ magnification.

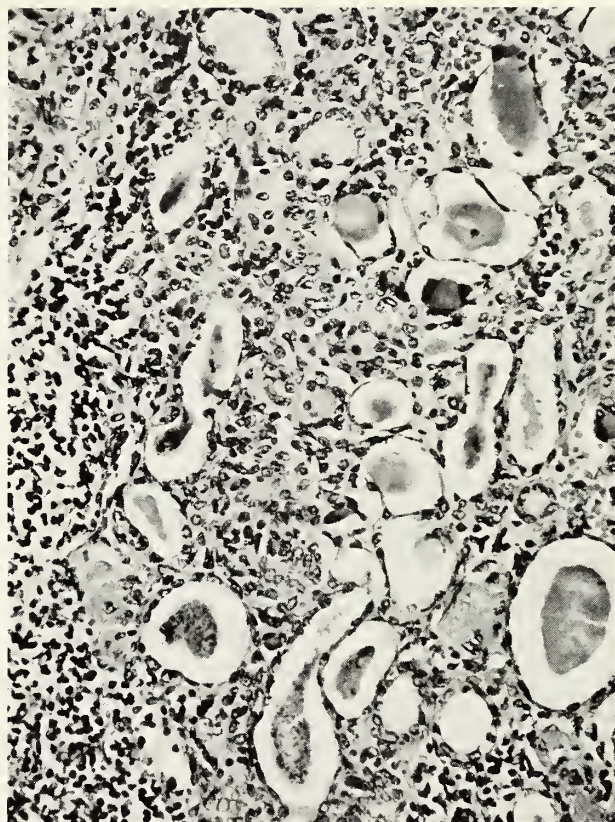


Figure 4. Light microscopy photomicrograph of renal cortex. Many tubules are atrophic with thin epithelium and proteinaceous casts. Lymphocytes are prominent within the interstitium. Hematoxylin and eosin stain. $\times 200$ magnification.

Within the first postoperative month, blood pressures ranged between 100-104 systolic over 65-70 mm Hg diastolic. The child was not on diuretic or anti-hypertensive therapy. Urine cultures during this time remained sterile, and creatinine clearances were 90-120 ml/min/1.73 m². During her second postoperative month, however, the child's blood pressure began to increase significantly to 140-150/85-95 while peripheral renin determinations at that time were normal. A dietary history showed evidence of considerable salt intake. Before resorting to drug therapy, we decided to institute a diet of mild salt restriction. The mother was instructed to cook without salt and to simply remove the salt shaker from the dining room table. Over the following two months, the child's blood pressures returned to levels of 120-130/75-85 mm Hg. Now at follow-up 18 months post nephrectomy, this child has normal renal function, no evidence of urinary tract infection, a normal appearing left kidney on an intravenous pyelogram, and blood pressure readings in the normal range.

Discussion

This child presented with a urinary tract infection and subsequently developed unilateral obstructive renal disease, pyelonephritis, and hypertension. Renal vein renin determinations were suggestive but not diagnostic that the hypertension was related to over-production of renin from the right kidney. Furthermore, nephrectomy initially appeared to cure the hypertension. Although unilateral pyelonephritis has been considered to be a frequent cause of hypertension — probably secondary to chronic vascular changes — it has recently been suggested that

unilateral chronic pyelonephritis and hypertension are only incidentally related and that, in fact, unilateral chronic pyelonephritis is a rare cause of hypertension.¹⁰ Unilateral nephrectomy has therefore been questioned as an appropriate therapy for this type of hypertension. Our patient meets the strict criteria outlined as necessary to causally link unilateral chronic pyelonephritis and hypertension.¹⁰ Furthermore, cure rates as high as 76 per cent are reported for children undergoing nephrectomy for hypertension associated with unilateral renal disease.¹¹ This figure contrasts to 25 per cent cure rates in the adult population.¹²

In view of the high success rate in children, we chose to treat this child's hypertension with a nephrectomy rather than subject her to the increased morbidity associated with the long term use of anti-hypertensive agents, suppressive antibiotics, and the anti-reflux surgery that otherwise would have been necessary. Although her blood pressure quickly returned to normal levels, a subsequent rise in blood pressure occurred concurrent with a generous salt intake at home (heavily salting her food at mealtime). Unfortunately, we were unable to obtain 24 hour urine collections for sodium excretion while the child was at home and therefore we are unable to document her salt balance. Nevertheless, simply removing all obvious sources of salt — *e.g.* salt shaker and cooking with salt — without subjecting the child to a rigid diet of salt restriction, was sufficient to restore her blood pressure to normal within two months. Kincaid Smith and co-workers have suggested that dietary salt restriction has little place in the therapy of hypertension,⁹ a view also supported in a recent editorial in *Lancet*.¹³ In contrast, diastolic blood pressure was found to be lower in patients undergoing salt restriction than

in control patients on a regular salt intake.⁷ Furthermore, normal volunteers demonstrated a clear rise in blood pressure when their dietary salt intakes were progressively increased.¹⁴ Moderate dietary salt restriction is relatively simple, is not likely to cause side effects in patients with normal renal function and clearly, in this patient, helped in her overall management. It would seem appropriate to try this maneuver in patients with mild hypertension before instituting drug regimens that may lead to unwanted side effects.

Harold L. Harrison, M.D.; Michael A. Linshaw, M.D.; and Francis E. Cuppage, M.D., Section of Pediatric Nephrology, and Department of Pathology and Oncology, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103. (Address reprint requests to Dr. Linshaw, Department of Pediatrics.)

References may be obtained from the authors.

FATAL YERSINIA ENTEROCOLITICA SEPTICEMIA IN A COMPROMISED HOST

Yersinia enterocolitica infections have been gaining widespread recognition in recent years, particularly in Europe. However, septicemia with this organism has remained a rare complication.

In 1949, Hassig, Karrer, and Pusterla¹ reported two cases of liver abscess with postmortem growth of *pasteurella pseudotuberculosis rodentium*. From its characteristics this germ today would correspond to *Yersinia enterocolitica*. These two cases have since been classified as septicemias.² Mollaret and associates, in a review of the literature (1971) could find records of only 17 well documented cases between 1949 and 1971,² including one case of meningitis and septicemia from the United States.³ Subsequently, a single case report from England has been published by Chessum *et al.*¹⁶ Abramovitch and Butas⁵ described a similar case from Canada in 1973. More recently many papers have emphasized the association of polyarthritits and *Yersinia enterocolitica* infections.⁵⁻⁸

This report describes a fatal case of *Yersinia enterocolitica* septicemia in Kansas, the first case to be reported in this state to our knowledge.

Case Report

Clinical History. The patient, a 61-year-old male veteran, was admitted to the Leavenworth VA Center with a four-day history of abdominal pain, diarrhea, vomiting, chills, and fever. Further close questioning elicited only the complaint of loss of control of the legs for one week, accompanied by pain in the legs and hands. On the day prior to admission the patient became mentally confused. There was a past history of heavy alcohol ingestion.

Physical examination revealed a well developed, fairly well nourished white male patient, seemingly alert but quite vague in manner, appearing weak, unsteady, and very weary. On admission temperature was 38 C; pulse, 125/min; and blood pressure, 130/80. The patient was observed to be hiccoughing constantly during the examination; his complexion was dusky and plethoric. Liver edge was palpable 4 cm below the right costal margin and not tender. Rectal examination revealed dark brown stools. There was pain on manipulation of the arms and legs, and deep tendon reflexes were depressed.

Investigations. Laboratory data revealed hemoglobin, 14.8 gm/100 ml; and WBC count, 6500/cu mm with 64% polymorphonuclear leukocytes, 7% lymphocytes, and 12% monocytes. White cell count gradually increased to 15,900 on the third day, and to 17,000 on the fourth day of hospitalization. The fasting blood sugar level was 274 mg/100 ml with 1+ glucose in the urine; VDRL test, non reactive; blood urea nitrogen, 38 mg/100 ml; and serum creatinine, 1.3 mg/100 ml. Serum electrolyte

values were: Na, 133 mEq/liter; K, 47 mEq/liter; chloride, 91 mEq/liter; and C₂, 26 mEq/liter. Agglutination tests for salmonella and *Brucella abortus* were negative; spinal fluid examination revealed normal findings; chest roentgenogram, negative; serum amylase and serum calcium, normal; and urine culture, sterile. Liver scan demonstrated findings suggestive of diffuse liver disease.

The patient ran a septic course with temperatures in the range of 40 C. Blood cultures drawn on the first and second days of hospitalization grew *Yersinia enterocolitica*. Identification of the organism was confirmed by the Center for Disease Control (Atlanta, Georgia), and was found to be serotype KGG. Disc sensitivity demonstrated that the organism was sensitive to chloramphenicol, Furadantin, Gantrisin, gentamicin, kanamycin, nalidixic acid, polymyxin B, streptomycin, and tetracycline.

One day following admission, the patient developed frank melena and hematemesis. Gentamicin and Carbenicillin therapy were initiated on the second day of hospitalization. Two days following admission a pustular lesion appeared on the left forearm. Aspirates from this cutaneous purulent lesion showed a moderate growth of the same organism.

The patient continued to run a septic course and died five days later.

Necropsy revealed: (1) focal necrotizing lesions involving the mucosa and the lymphoid nodules of the terminal ileum and proximal colon; (2) multiple abscesses involving the lungs, kidneys, and skin of the left forearm; and (3) advanced nutritional cirrhosis of the liver.

Comment

Infections with *Yersinia enterocolitica* are usually regarded as harmless and self-limiting. Clinical manifestations range from asymptomatic carriers to death in septicemia. Manifestations such as gastroenteritis, acute terminal ileitis, mesenteric lymphadenitis, erythema nodosum and multiforme, abscesses, arthritis, and Reiter's syndrome have previously been well described.^{5, 7, 9-11} The septicemic form, as seen in our patient, is not common. To our knowledge only nine septicemic cases, including ours, have been reported in the United States.¹⁵ Although 11 cases of *Yersinia enterocolitica* (then known as *Bacterium enterocoliticum*) infections were reported in this country from 1933-1947,¹² the first generalized infection in the United States was recognized in 1968 when a case of *Yersinia enterocolitica* meningitis with panophthalmitis was reported from St. Louis, Missouri.^{13, 14} World distribution of reported cases is as follows:⁸

South Africa	10
United States	9
Canada	1
Belgium	6
France	2
Switzerland	2
Sweden	3
Norway	1
Great Britain	1

Most cases of septicemia due to *Yersinia enterocolitica* occur in compromised hosts, which can explain the high mortality, varying from 50-67 per cent.^{2, 15} Septicemia in patients without evidence of underlying disease has been diagnosed in a few cases.^{13, 16-18} Underlying diseases reported in the literature include diabetes mellitus, thalassemia major, aplastic anemia, leukemia, liver cirrhosis, kwashiorkor, and lymphoma.^{2, 8} Instances of opportunistic infections in dialyzed patients or other immunosuppressed patients have been reported. As reflected in our case, mortality is particularly high in patients with cirrhosis. The overall mortality for the 33 reported cases of *Yersinia*

enterocolitica prior to March 1976 was 38 per cent; in patients with cirrhosis, mortality was 67 per cent.⁸ Conn has speculated that cirrhotic livers may permit bacteria to bypass the reticuloendothelial system of the liver, thereby allowing dissemination of the germ via the peripheral blood.¹⁹

Rabson *et al.*²⁰ has divided the clinical presentation of *Yersinia enterocolitica* septicemia into two pictures — acute septicemic and subacute localizing type. Our patient — who presented with an acute onset of malaise, abdominal pain, vomiting, chills, and fever — would correspond to the former typhoid-like picture.

This case was similar to one reported in Canada⁴ in which cellulitis was a prominent feature. Three previous cases with cutaneous infections have been reported.^{15, 21}

The route of entry is unclear but most likely the patient was infected by the fecal-oral route in view of the gastrointestinal symptoms of vomiting and diarrhea. Unfortunately, no information regarding pets was available.

Therapy of *Yersinia enterocolitica* with antibiotics, even when the organism is supposedly sensitive, has frequently been unsuccessful. The failure of response to antibiotics might be

related to the underlying disease. This patient died despite early recognition and prompt institution of antibiotic therapy with gentamicin to which the germ was sensitive.

In conclusion, while *Yersinia enterocolitica* usually produces a self-limiting enteric infection, it should be stressed that it can on occasion present with a fulminant course, especially in a compromised host.

Acknowledgements

Gloria Veach, Microbiologist, provided expert technical assistance.

G. I. Saliou-Diallo, M.D.;* **A. Kim, M.D.;**† **J. Pike, M.D.;*** **and G. M. Rao, M.D.,**‡ **Veterans Administration Center, Leavenworth, KS 66048.** (Address reprint requests to Dr. Saliou-Diallo.)

* Staff Physician.

† Chief, Laboratory Service.

‡ Chief, Nuclear Medicine Service.

References may be obtained from the authors.

EARLY IDENTIFICATION & MANAGEMENT OF EAR PROBLEMS IN CHILDREN

October 24, 1979

Charles F. Curry Auditorium

Baptist Memorial Hospital

6601 Rockhill Road

Kansas City, Missouri

Registration fee is \$35.00 for Physicians; \$15.00 for Audiologists, Nurses and health volunteers, \$3.50 for students and residents of medicine, audiology and nursing. This includes the seminar, coffee breaks and luncheon. Advance registration is appreciated.

ACCREDITATION

AMA-6 Category I Hours; AOA 7 Category 2-D Hours; Amer. Acad. of Family Phy. — 6 Hours; Kansas State Board Nursing — 6 Contact Hours; Application made for credit to Missouri Nurses Assn. and Missouri Hearing and Speech.

OBJECTIVES

1. Update of the Best Audiological screening methods in all age groups of children.
2. Reaffirm and explain your responsibilities to hearing deficient children as a physician.
3. Explain state requirements for hearing testing and proper follow-up of the child.
4. Update on language and social-psychological deficiencies caused by hearing loss.
5. Discussion of recent trends in medical and surgical treatment of Otitis Media.

For additional information contact:

Program Coordinator
Forrest H. Kendall, Jr., M.D.
1010 Carondelet Drive
Suite 224
Kansas City, Missouri 64114
816-942-7200



Current COMMENT

When Is a Diabetic?

JOSEPH L. KYNER, M.D.,* *Kansas City, Kansas*

DIABETES MELLITUS could benefit more than almost any medical entity from improved standardization of definitions and classification. "Does this patient have diabetes?" is a question asked every day by the clinician. There is controversy enough in the therapy of the diabetic (insulin vs oral agent vs diet alone), but whether to call the patient a "ketosis-prone" diabetic, a "juvenile-onset" diabetic, or an "insulin-dependent" diabetic can be just as confusing, if not more so. Abbreviations of such terms (JODY, IDD) have been increasingly employed, and causative criteria (islet cell antibody positive or negative, HLA typing) have been recently proposed.

The problem is that diabetes mellitus has multiple causes — environmental and genetic — and is not one disease, but a syndrome. Since there is much that remains unknown about the pathogenesis of diabetes in both the young and the old, classification types should be based on ordinary clinical criteria and should be pertinent to actual or expected therapy. A patient's type of diabetes should reflect the clinical severity and management of diabetes in that patient.

Classification

Recently, suggestions have been made for classification and definition changes that are more in keeping with what clinicians need for predicting and managing their diabetic patients' outcomes (*Table I*). Terms such as juvenile diabetes, juvenile-type diabetes, adult or maturity-onset diabetes, maturity-onset diabetes of youth (MODY), latent

diabetes, subclinical diabetes, and chemical diabetes do not adequately describe the diabetic patient and should not be used. Much more relevant is whether the patient is insulin-dependent or insulin-independent, obese or thin, and losing weight or gaining weight with his or her accompanying hyperglycemia. The new diabetic who is thin and losing weight will usually be insulin-dependent, while the obese diabetic who is gaining weight without insulin therapy will usually be a non-insulin-dependent type.

Definition by Hyperglycemia

The bottom line for defining diabetes mellitus is excessive sugar in the blood. It follows that one of the main criteria for the severity of diabetes is the

TABLE I
CLASSIFICATION OF IDIOPATHIC DIABETES
MELLITUS AND OTHER CATEGORIES OF GLUCOSE
TOLERANCE SUGGESTED PROVISIONALLY BY THE
NIH NATIONAL DIABETES DATA GROUP

Idiopathic diabetes mellitus (DM)
I. Insulin-dependent type (IDDM)
II. Not insulin-dependent types (NIDDM)
a. Nonobese NIDDM
i. Insulin-treated for hyperglycemia
ii. Not insulin-treated
b. Obese NIDM
i. Insulin-treated for hyperglycemia
ii. Not insulin-treated
Gestational diabetes (GDM)
Impaired glucose tolerance (IGT)
Previous abnormality of glucose tolerance (PrevAGT)
Potential abnormality of glucose tolerance (PotAGT)
Diabetes or glucose intolerance associated with certain conditions and syndromes

From the Division of Endocrinology, Metabolism and Genetics, Department of Medicine, University of Kansas School of Medicine-Kansas City.

* Associate Professor of Medicine; Director, Diabetes Clinic.

Address reprint requests to Dr. Kyner, Department of Medicine, UKSM-KC, 39th and Rainbow Blvd., Kansas City, KS 66103.

TABLE II
SEVERITY OF FASTING HYPERGLYCEMIA*

	Plasma Glucose
"Mild" hyperglycemia	130-199 mg/dl
"Moderate" hyperglycemia	200-299
"Severe" hyperglycemia	300 and over

* According to K. West.

degree or amount of hyperglycemia (*Table II*). Repeated fasting hyperglycemia is clearly diabetes mellitus, but should occasional elevations of fasting plasma sugars or elevated levels after a load of glucose (glucose tolerance test) or postprandially define early diabetes? The latter are affected by many factors including the patient's age, activity, medications, diet, and concomitant diseases or stress. Standardization is therefore difficult, and there is much disagreement on what the cut-off values should be for abnormalities of a glucose tolerance test or a two-hour postprandial sugar. Indeed, it became apparent that some patients (particularly older adults) were improperly labeled as being diabetic, and often were over-medicated for a simple weight-loss or dietary problem.

Although the glucose tolerance test remains an important tool for the complete evaluation of several hypoglycemic problems (*e.g.* the patient with an insulinoma where the fifth or sixth hour glucose levels will be low with insulin levels high, and the reactive hypoglycemic where only the second or third hour glucose levels may be low with insulin levels normal), for most suspected diabetics it is usually unnecessary. A "negative" or normal glucose tolerance test may even be a detriment, as it can give a false sense of security to the patient and the physician. A patient with a strong family history of diabetes is a diabetic suspect, particularly if he or she is obese (adults weighing 120 per cent or more of standards of the Metropolitan Life Insurance Company). The treatment (ideal weight achievement and maintenance, and appropriate diet) would be the same in such an individual whether glucose tolerance is normal or abnormal. Only if the fasting glucose is significantly elevated (more than mild or moderate hyperglycemia) would additional therapy be considered. An exception is the newly pregnant woman who is a diabetes suspect (family history, previously large babies, or fetal wastage) for in this instance even mild to moderate glucose intolerance (by O'Sullivan's Criteria) should be documented early

TABLE III
FORMERLY ACCEPTED DIAGNOSTIC CRITERIA
FOR DIABETES MELLITUS

	USPHS*		BDA†	
	Serum or Plasma	Whole Blood	Serum or Plasma	Whole Blood
Fasting	125‡	110	140	120
1 hr	195	170	—	—
2 hr	140	120	210	180
3 hr	125	110	—	—
Age-related gradients — over 50 years of age, add 10 mg/dl per decade to nonfasting values			(one other value above 2-hr value) No age-related gradients	

* United States Public Health Service

† British Diabetic Association

‡ Glucose concentration — mg/dl (upper limit values)

and appropriately treated during pregnancy in order to prevent fetal loss or morbidity.

Even an elevated two-hour postprandial blood sugar by itself should be considered an index of suspicion, and not a criterion for definition or determination of severity of diabetes mellitus. Illustrating the disagreement in this area are the higher glucose levels the British have allowed in their patients before labeling them as diabetic (*Table III*).

The NIH National Diabetes Data Group has proposed for adoption new levels of glycemia diagnostic of diabetes. These are higher limits (*Table IV*) than those formerly recommended (*Table III*), and more in keeping with the British criteria. Where to draw

TABLE IV
PROPOSED CRITERIA BY THE NIH NATIONAL
DIABETES DATA GROUP

Diagnostic Criteria for Diabetes Mellitus (1 or 2)

1. Elevated fasting glucose concentration on more than one occasion ≥ 140 mg/dl (venous plasma).
2. Fasting value less than 140 mg/dl, but 2 hr and one other sample between fasting and 2 hr on glucose tolerance testing ≥ 200 mg/dl.

Diagnostic Criteria for Impaired Glucose Tolerance (1, 2, and 3)

1. Fasting value below 140 mg/dl.
2. 2 hr between normal (< 140 mg/dl) and diabetic (≥ 200 mg/dl) values.
3. A value between zero time and 2 hr must be elevated (≥ 200 mg/dl).

the line remains controversial, however, and several investigators feel these maximum values are too high. Several fasting plasma sugars below 125 mg/dl in one individual excludes diabetes, but several levels above 140 mg/dl are diagnostic. Levels between 125 and 140 should probably be regarded as at least equivocal, and would certainly warrant rechecking.

Other Factors

There are a number of disorders, most of them infrequent or rare, in which impaired glucose tolerance or even fasting hyperglycemia may be an accompaniment or resultant of the primary problem. Some of these patients might appropriately fit the definition of diabetes mellitus (*Table IV*), but from a practical standpoint expected morbidity or mortality will usually result from the primary disease and not from the carbohydrate abnormality. Some examples of these disorders are hormonal (pheochromocytoma, Cushing's disease), pancreatic (cystic fibrosis, hemochromatosis), genetic (myotonic dystrophy, muscular dystrophies, progeria, Prader-Willi syndrome), and cases of acanthosis nigricans with insulin receptor abnormalities.

Several factors have been suggested that may have diagnostic, classification or therapeutic significance, but many of these are not clinically practical or universally available and are only of research or special investigative interest at this time. These include insulin secreting response, insulin antibodies, insulin resistance, C-peptide levels, islet-cell antibodies, HLA type, and glucagon levels. Any one or all of these factors (or others not mentioned) may eventually be found to be of importance in diabetes classification. The practicing clinician needs an effective and practical simple system of classification today, however, and this requires indices that are universally feasible and economically reasonable.

Hemoglobin A_{1c} is a fairly new parameter of long-term glucose levels that is becoming more universal and appears to be an important index of diabetic control. Naturally present in the blood, hemoglobin A_{1c} is a glycosylated hemoglobin that increases proportionally with hyperglycemia. Because of its long-half-life, it reflects the degree of hyperglycemia for several weeks prior to its measurement. It is not sensitive for mild or episodic hyperglycemia, however, and therefore is of limited value for the diagnosis of diabetes mellitus.

An important clinical aspect of any classification system is the significance for future complication or morbidity. The chronic complications of diabetes, particularly the microvascular changes, may occur at

any age, but seem to be related to the severity and duration of glycemia. There is inadequate data regarding the complications of diabetes to differentiate lean, insulin-dependent diabetics from obese, insulin-independent diabetics. It will also be important to discover whether morbidity from obesity can be distinguished from the morbidity of mild hyperglycemia. These types of epidemiologic studies will be dependent upon a uniform clinical classification of diabetes.

Insulin-Dependence vs Insulin-taking

Insulin-dependence is not equivalent to insulin-taking. Diabetics may be over treated just as they may be under treated. An older, obese diabetic seen for the first time who is taking insulin could perhaps be better managed on diet alone. Initially it may be difficult to classify such a patient as it can be impractical to decrease or discontinue insulin. Therefore, judgement should be reserved if there is any question about diabetes classification. Based upon clinical data available, the clinician might want to amend the diagnosis with a term such as "probably insulin-independent."

Summary

Diabetes mellitus should be suspected in the patient with a strong family history of diabetes, who is obese, or who has had any of the classic symptoms of diabetes (polydipsia, polyuria, polyphagia, or weight loss), or any suggestion of acute ketoacidosis or hyperosmolality. If the fasting blood sugar is below 125 mg/dl on several occasions, the patient is not diabetic. Several fasting sugars greater than 140 mg/dl are diagnostic of diabetes, and values between 125 mg/dl and 140 mg/dl are equivocal and should be rechecked. Postprandial and glucose tolerance values are much more controversial and should be considered with caution (see text and *Table IV*).

The weight of the patient should be recorded and recent weight gain or loss should be noted or documented in subsequent visits. If mild to moderate hyperglycemia is present with obesity, the patient is probably an insulin-independent diabetic. If there is mild to moderate hyperglycemia, and the patient is thin or losing weight, the patient is probably an insulin-dependent diabetic.

A younger person or child is more likely to be an insulin-dependent diabetic, and the older individual (when first diagnosed) is more likely to be insulin-independent, but since these types of diabetes can occur at any age, age per se is not as important in classification as is the level of glycemia and whether obesity is present or not. A strong family history of

diabetes is more supportive of insulin-independent diabetes, but by itself is not of critical importance.

Conclusion

For a new diabetic, degree of hyperglycemia defines the presence of diabetes and its severity. Obesity or leanness defines the type of diabetes, and in most instances whether insulin-dependent or insulin-independent. Age of onset or discovery of diabetes, family history of diabetes, and evidence of diabetic complications will further define the diagnosis and type of diabetes.

Self-Assessment Questions

1. To make the diagnosis of diabetes, a glucose tolerance test must be done. (T or F)
2. Obesity and hyperglycemia are more frequent in the non-insulin-dependent diabetic than in the insulin-dependent diabetic. (T or F)
3. Fasting hyperglycemia, rather than postprandial hyperglycemia, is most suggestive of diabetes. (T or F)
4. Diabetes with onset in childhood is always the insulin requiring type. (T or F)
5. Which one of the following is most diagnostic of diabetes in a patient:
 - a. Obesity
 - b. History of previously taking insulin
 - c. 2 hr postprandial plasma glucose of 180 mg/dl
 - d. Fasting plasma glucose of 145 mg/dl
 - e. Family history of diabetes

(Answers on page 580)

Suggested Readings

1. Harris, M.; Cahill, G. and members of NIH Diabetes Data Group Workshop: A draft classification of diabetes mellitus and other categories of glucose tolerance. Widely distributed for comments and suggestions, 1978.
2. West, K.: *Epidemiology of Diabetes and Its Vascular Lesions*. New York, Elsevier, 1978.
3. West, K.: Standardization of definition, classification, and reporting in diabetes related epidemiologic studies. *Diabetes Care* 2:65-76, 1979.
4. O'Sullivan, J. and Mahan, C.: Criteria for the oral glucose tolerance in pregnancy. *Diabetes* 13:278, 1964.
5. Gabbay, K. H. et al.: Glycosylated hemoglobins and long term blood glucose control in diabetes mellitus. *J. Clin. Endocrinol. Metab.* 44:859-864, 1977.

Sudden Death Syndrome

(Continued from page 549)

and once the individual threshold has been reached, the sudden death syndrome may occur.

References

1. Alexander, C. S. and Nino, A.: Cardiovascular complications in young patients taking psychotropic drugs: A preliminary report. *Am. Heart J.* 78:757-769, 1969.
2. Johnson, F. P., et al.: Sudden death of a catatonic patient receiving phenothiazine. *Am. J. Psychiatry* 121:504-507, 1964.
3. Leestma, J. E. and Koenig, K. L.: Sudden death and phenothiazines: A current controversy. *Arch. Gen. Psychiatry* 18:137-148, 1968.
4. Reinert, R. E. and Hermann, C. G.: Unexplained deaths during chlorpromazine therapy. *J. Nerv. Ment. Dis.* 131:435-442, 1960.
5. Richardson, H. L.; Graupner, K. I. and Richardson, M. E.: Intramyocardial lesions in patients dying suddenly and unexpectedly. *JAMA* 195:254-260, 1966.
6. Guillan, R. A.; Zelman, S.; Reinert, R. E. and Smalley, R. L.: Electron microscopy: Sudden death in patients under phenothiazine therapy: Study of three cases. *J. Kans. Med. Soc.* 71:213-218, 1970.
7. Guillan, R. A.; Smalley, R. L. and Zelman, S.: Electrocardiographic and ultrastructural cardiac effects of phenothiazine in rabbits: A preliminary report. *Chest* 62:62-65, 1972.
8. Guillan, R. A.; Yang, C. P.; Wilson, S. S. and Hocker, E. V.: Phenothiazine cardiomyopathy: Electrolyte alterations in serum and cardiac tissue of rabbits with acute thorazine intoxication. *J. Kans. Med. Soc.* 78:459-463, and 487, 1977.
9. Guillan, R. A.; Yang, C. P. and Hocker, E. V.: Multiple antibody screening of patients under high doses of phenothiazines. *J. Kans. Med. Soc.* 78:221-227, 1977.

**Are You Getting Your Journal
Regularly?**

If Not . . .

**Have You Notified the Society's
Executive Office of Your New Address?**

Send all changes of address to:

**THE KANSAS MEDICAL SOCIETY
1300 Topeka Avenue
Topeka, Kansas 66612**



Deus ex machina – sometimes

One of the prime features which distinguishes the human animal from its cousins is preoccupation with illness and injury and insistence upon doing something about them. True, there are sporadic examples of such interest in some animals from the mother dog who nuzzles her still newborn until it wriggles and whimpers to the elephant herd that gently surrounds and supports the ailing elder, knowing that if he falls he'll never rise again. But these are instinctive and limited acts upon which we bestow our own interpretation of the actor's awareness of purpose and effect. In the last several thousand years, this refusal to consider these disabilities as natural and unquestioned hazards of existence, and the determination to neutralize them, have created one of the more emphatic disturbances in the balance of nature, a point which the ecology zealots choose to ignore. Now, medical care has not only established itself as a human characteristic but has achieved the dubious distinction of being designated an industry. Further, this ecologic impact and the industrial connotation have resulted in modern medical service being cited as a threat to the economic balance as well.

The situation derives in part from a conflict in attitudes. A materialistic society has had trouble understanding the economic implications of medical successes, and medical practice has had trouble adapting to a commercialized system of production. Contradictory as the attitudes may seem, they spring from a common source: the lack of a tenable measure of life and health in material terms. The situation has been made more problematic by the burgeoning technology that has invaded medical practice wagging its electrons behind it. A case in point emerged recently in a report from the Committee on Obstetrics: Maternal and Fetal Medicine of the American College of Obstetricians and Gynecologists. The

committee, studying the use of fetal monitoring, with a view to establishing an official posture, had to settle for an interim report and determination that, although fetal monitoring in itself is a valuable procedure, more investigation is in order before the final word can be written. Still, fetal monitoring epitomizes our preoccupation with technologic procedures, and perhaps we can gain some perspective from it.

First, it should be recognized that, though we sometimes berate this dependence on mechanical and electronic gadgetry, we have crossed a technologic threshold, and there will be no turning back. Even if we declare a moratorium on medical technology, other disciplines will be pursuing their own, and who can doubt that possible medical applications will be exploited? There seems little likelihood of any self-imposed restrictions from medical sources since most medical establishments of size, especially teaching institutions, have departments specifically charged with the development and maintenance of the flashing, clicking hardware. The appeal of such devices rests upon their fulfillment of a sixth sense need. There is always another question beyond those answers supplied by the physician's standard equipment, or there is a need for impressive confirmation in anticipation of challenge — from the court, from the audit committee, from the third party's office — or the patient and his disease refuse to follow the script. The machine with its supra-natural sensors, though it relies on us to feed it, can give an additional answer or a new direction to our thinking and is accorded great honor simply because its speed, organization, or objectivity exceed our own. It is a potent ally, and though a suggestion by a worthy assistant may be ignored, the physician will jump if the machine clears its throat. Juries may view

an informed medical opinion with skepticism, but entering a machine's report into the record assures unequivocal truth. So a technologic future, like our children, is our pride, our promise — and our threat.

Fetal monitoring embodies the fundamental features of technology but offers a unique purpose. Not only are two patients involved at once but the fetus poses special problems, economically as well as medically. If it can be brought from a state of high risk to healthy birth, we have a potentially productive citizen instead of a damaged child with the attendant emotional and economic stresses. But the mother's carefully designed protective elements insulate it from our crude attempts to detect its condition. Enter the monitor and we have an objective, perceptive and, we presume, authoritative consultant who brooks no argument.

But, as usually happens, the practice has not yielded the full promise. The machine ultimately tosses the problem back in our laps. In the case of fetal distress, for example, there may be need for prompt intervention. A well-recognized increase in the Cesarean section rate has become a matter of concern. While section has moved from the desperation procedure with dismal statistics of the past to a relatively safe and well-controlled procedure, it is by no means innocuous. This is only one of the ways in which we have replaced one problem with another, and the underlying question is, what is the net gain from the transaction? The transaction itself, however, asks us if we are using the machine at the proper time, if we are giving it the proper information and, in particular, if we are acting properly upon its response.

The tentative nature of the committee's report emphasizes the diagnostic role of such machines as compared with the therapeutic sequel which is still in our hands, and the difference in these roles. A therapeutic regimen must be demonstrated to be reasonably safe, effective, and reproducible to warrant acceptance. The machine, for all its contributions, is detached from the therapeutic process and, anyway, conscienceless, so it does not face the same order of stringent and direct requirements. It must produce information which can be translated into therapeutic effect, and it is this process of translation which carries the real responsibility — and remains upon the physician. Fetal monitoring has been in use for several years but this period has been, in a sense, a laboratory exercise, a testing period during which the machine has been taken to the subject. Only now is the information being assessed which will establish its true contribution.

Economics is an integral part of the picture be-

cause medical machines have a significant though by no means unique characteristic: they are expensive. "Expense" is, of course, a relative term — relative, that is, to the value of its effect and we're back to square one: the expression of human qualities in material terms. Medical machines are expensive to design and to produce, and obsolescence is rapid. Hospital attics and basements are full of retired gadgetry, sometimes cannibalized but generally sitting there as mute testimony to our feeling that they are too good to throw away but we can't think what to do with them.

The acquisition of a new machine usually means that the medical staff has convinced the administration that the device will serve a purpose — beyond some publicity in the evening paper, that is. Since the machine and its operation must be paid for, a charge is determined by the administration using some analytic method which may or may not be valid but is confusing enough to seem appropriate. The administration hopes, of course, for routine use since this simplifies bookkeeping, amortizes the cost more quickly, and makes for a good report to the board. A valid determination of the service's financial equation, however, has often been obscured by the fact that, again in the interest of public relations, some of the more visible charges have been discounted (to attract the public) while charges of the more obscure procedures made up the difference. (But that, of course, was in a less regulated day.)

Today, consideration of everyone's favorite subject, cost containment, has called attention to the fact that physicians are woefully lacking in knowledge of what their decisions look like when transposed from the order sheet to the patient's bill. There is continual urging for them to acquaint themselves with the financial facts of their actions even to the point that exposure to such costs has assumed, for medical students, curricular status. The hospital and the profession are no longer alone in the decision to purchase — or use — the machine. Outside voices including, in the front line of the chorus, the government's are making themselves heard with the annoying effect that such acquisition — and use — must have a more demonstrable indication of necessity.

It has been the traditional — and acknowledged — medical attitude that life and health are the first order of things and therefore worthy of any expense (which may be one of the reasons the lower animals, whose habits generally reflect a deepseated thrift, have elected not to get involved). But physicians have welcomed the machine concept because they en-

(Continued on page 576)

Charles E. Henneberger, M.D.

Dr. Charles E. Henneberger, 93, Atwood, died August 28, 1979.

Dr. Henneberger was born in Greencastle, Pennsylvania, and was graduated from the University of Pennsylvania Medical School in 1910. Following service with the Army Medical Corps during World War I, he established a practice in Atwood which he continued until his retirement in 1977.

Survivors include his wife and one daughter.

John D. Huff, M.D.

Dr. John D. Huff, 57, died September 16, 1979, in Kansas City.

Dr. Huff was born October 19, 1921, in Kansas City and was graduated from the University of Kansas School of Medicine in 1952. Long active in professional affairs, he was Past President, Kansas Academy of Family Physicians; Diplomate, American Board of Family Practice; Charter Member, American Academy of Family Physicians; and Past President, Kansas Medical Society, 1977-78.

Survivors include his wife, two daughters, and two sons. Memorial contributions may be made to AMAERF in care of the Wyandotte County Auxiliary.



Council Meeting

Report of Meeting Held September 16, 1979

A meeting of the Council was held on Sunday, September 16, 1979, at the Hilton Inn, Salina, beginning at 10:00 AM. Present were: Drs. Donald D. Goering, President, Coldwater; Lewis G. Allen, Kansas City; Donald E. Beahm, Great Bend; John N. Blank, Hutchinson; Kenneth W. Boese, Manhattan; Jack R. Cooper, Shawnee Mission; Louis M. Culp, Kansas City; Robert D. Durst, Jr., Topeka; Herbert Fransen, Newton; Phillip A. Godwin, Lawrence; Herman W. Hiesterman, Quinter; Robert W. Hughes, Lawrence; Lew W. Purinton, Wichita; Alex Scott, Junction City; Floyd L. Smith, Jr., Colby; Stephen J. Smith, Arkansas City; Marvin D. Snowbarger, Emporia; William K. Walker, Sedan; Howard N. Ward, Topeka; Roger D. Warren, Hanover; Wallace N. Weber, Hays; Kermit G. Wedel, Minneapolis; Emerson D. Yoder, Denton; Theodore E. Young, Topeka. Also present was Joseph G. Hollowell, M.D., Director, Kansas State Department of Health. Also present was Mrs. Kermit G. Wedel, President, KMS Auxiliary. Also present were Jerry Slaughter, Gary Caruthers, and Val Braun.

Dr. Ward presented the report of the Committee on Professional Advertising. He stated that all professions, including the legal profession, have to contend with the advertising issue as a result of the recent Supreme Court decision. He indicated that the committee has attempted to develop a proposal that would meet legal requirements, satisfy ethical considerations in such a way as not to be considered restrictive of trade, and acceptable to all segments of the healing arts. (For a complete overview, refer to pp. 436-444, July 1979 issue of *The Journal of the Kansas Medical Society*.) Copies of the proposed bill were distributed to the Council and Dr. Ward reviewed each section of the bill.

Considerable discussion of this issue ensued, during which Dr. Ward clarified that the term, "licensee," was used as a generic term applicable to all three groups licensed under the Healing Arts Act. He also reiterated that while some reasonable restrictions on the time, place and manner of advertising are allowed, purely factual, verifiable information cannot be forbidden under the law. Dr. Ward reported that the present draft of the advertising bill is generally acceptable to the osteopaths and chiropractors, and that with a unified front the bill has a

good chance of being adopted by the legislature. The bill contains sufficient safeguards and yet is broad enough to cover all aspects of communication.

The report of the Professional Advertising Committee was approved. Dr. Goering announced that the Judiciary Committee of the Legislature will conduct hearings on this issue next week, and encouraged the Council members to submit comments to the Executive Office prior to the hearing.

Dr. Goering introduced Dr. Joseph Hollowell as the new Director of Health.

The Council studied a proposal submitted by Dr. Warren Meyer, presented by Dr. Godwin, concerning the purchase of the IBM 34 computer system. After a lengthy discussion of this subject, the decision was deferred until hearing the Treasurer's report.

Dr. Walker presented the 1980 budget. He reviewed the total income and expenditures, and pointed out that the expenditures have steadily risen over the past few years. In referring to Dr. Meyer's letter, indicating the alternatives for financing the computer and the potential for requiring a dues increase, Dr. Walker indicated that he favored purchasing additional computer time rather than purchasing a computer system. He reminded the Council that the Ebel retirement fund will require an additional \$32,000 to complete this obligation. He also pointed out that the contributions to MEDISERVE may need to be increased.

The Council voted to investigate the possibility of renting computer time in Topeka suitable to accommodate Mr. Blough's software package, and report to the January, 1980 Council.

The Council voted to retain the building fund as a separate fund, and to invest as much as possible of this fund in high-yield investments.

The Council voted the following salary increases: The Executive Committee will determine the salary for office secretaries: Mr. Slaughter, 7% increase; Gary Caruthers, 7% increase; Val Braun, 10%.

Dr. Goering announced that the staff person to attend the AMA House of Delegates meeting in Hawaii will be Val Braun. He asked that, in honor of her 20 years service with the Kansas Medical Society, the Council approve paying her husband's expenses to Hawaii. This was approved.

The budget was approved as presented.

Dr. Young reported on the activities of the Welfare Advisory Committee. He stated that the existing SRS policy is working against encouraging patients to secure their own personal physician. While the SRS currently pays full fees to hospitals, the present fee structure under Title XIX is unacceptable to physicians. The Council approved the committee's proposal to approach the Governor and Legislature for a more favorable payment mechanism to primary care physicians.

Dr. Scott, AMA Delegate, reviewed the pending chiropractic lawsuits on the national level, and indicated that the AMA House of Delegates' position on National Health Insurance is unchanged from the position adopted last year.

Dr. Goering reported on the AMA action to withdraw from the Liaison Committee on Continuing Medical Education. He explained that the AMA has now assumed the full responsibility for accrediting organizations for continuing medical education and has approved the medical societies' accrediting local organizations which provide continuing medical education. He also announced that Dr. Lew Purinton has been nominated for membership on the AMA Committee on Accreditation.

The Council approved the printing of a CME folder for distribution to KMS members. The booklet would provide space for certificates of attendance and information on the law and reporting requirements for physicians.

The actions of the Executive Committee, with the exception of the recommendation to purchase the IBM System 34 computer, were approved.

The Council heard the following reports on interim legislative committees:

Health Care Cost Containment: The committee is presently looking at the prospective hospital rate review. Hearings are held on testimony from states that have state-mandated programs and voluntary programs. The Governor is also developing a health cost proposal.

The Public Health and Welfare Committee is considering local public health departments and will probably recommend that a separate study be conducted next year during the session because of the broad scope of the issue. The committee is also considering credentialing of allied health professionals and developing a uniform system for review.

The Judiciary Committee will be considering the advertising issue next week.

The Governmental Organization Committee is considering a proposal that all mental health personnel be placed under one regulatory agency.

The Board of Nursing is developing regulations for the Advanced Registered Nurse Practitioner. There appears to be some controversy about the issue within the nursing ranks.

Mr. Slaughter reported that in compliance with the House of Delegates resolution, the Executive Office invited the various specialty societies to list the services in which the specialty societies may be interested. The poor response received to date prompted the Council to agree that the Kansas Medical Society should hold off offering such services unless more interest is indicated by the specialty societies.

A written report by Dr. George Penn, Chairman of the KMS Impaired Physicians Program, was presented. Dr. Scott commented that more physicians are voluntarily seeking help as a result of the program. The Executive Committee hopes that non-KMS members will be served by this program.

No organized Sports Day or Banquet has been set for the 1980 Annual Meeting. Physicians in the Kansas City area will be asked to allow their memberships to be used by other physicians who may wish to participate in sports on an individual basis.

The Council explored the possibility of electing a Kansas physician to an AMA office. Dr. Scott reported that there are presently three physicians with sufficient experience and exposure at the AMA level to be elected. He named Drs. Clair C. Conard, William J. Reals and Lew W. Purinton as such possibilities. The election of a Kansan to one of the national offices would provide more representation and exposure for the mid-western point of view. It was estimated that the cost for running such a campaign could exceed \$10,000, with no guaranteed results. Dr. Goering announced that the Executive Committee will be in contact with the membership concerning financial support for such a program.

Dr. Goering reported that Dr. William C. Swisher, Secretary of the Kansas State Board of Healing Arts, recently experienced a stroke and is presently a patient in the Wesley Medical Center, Wichita.

The meeting adjourned at 1:40 PM.



The Kansas Press Looks at Medicine

More Flexible AMA

The American Medical Association is not the same AMA most of us grew up with.

That AMA was a crosspatch pterodactyl which regarded change as a sure path to destruction.

Today's AMA is more inclined to sweet reasonableness than to stubborn resistance.

Put simply, it couldn't lick 'em, so it's joining 'em.

That's the evidence from July's AMA convention during which delegates knocked down a half-dozen resolutions declaring defiance of any national health plan which involves the federal government.

The AMA has been fighting national health insurance since the late '40s, when President Truman first suggested it.

Now, the doctors' leaders have called for "flexibility to react" to the spate of health proposals before Congress.

This does not necessarily mean the AMA is relaxing its grip on the status quo. However, it does signal a feeling in the profession that some form of national health insurance — public or private — is inevitable.

It does credit to the AMA that it recognizes health care changes will continue, and for understanding that development of a national health plan is of too great a concern for the American people to be left solely to the medical profession.

Many people and institutions are in the act today: the patients, who are becoming increasingly vocal about their health care, insurance firms, business and industrial firms which pay health costs, and government agencies.

The AMA now has a national health plan of its own, featuring voluntary participation. It will be one of many debated in the coming months.

That debate will be helped by this new signal from the AMA that it now has some flexibility. It didn't contribute much to the discussion when all the doctors could say was "No!" and then "No!" again. — *Hutchinson News*, Aug. 13, 1979.

Doctors Beware

At its July convention, the American Medical Association knocked down a half dozen resolutions which declared defiance to national health plans involving the federal government.

This is a decided change from the AMA of recent decades. You need not go back far to recall AMA cries that government interference in the medical industry is certain to lead to lower quality health care.

One wonders about the reason for this change. It could be the membership is changing and doctors are becoming more liberal. Maybe the AMA leadership has decided that if you can't whip them, join them. And maybe another reason is greed.

Recent years have seen inflation in health care costs which have outstripped other areas. Along with this, the average income of doctors has increased more than even federal employees.

Actually, doctors now love health plans, of any sort, whether it's Blue Shield, Medicare or Medicaid. They have become accustomed both to the paperwork involved and the fat fees allowed. The public, too, has become accustomed to the complex filling out of forms and disregards pretty much the costs so long as someone else foots the bill.

But private business, which gets stuck for a lot of the bills, and Uncle Sam, which shells out billions annually for doctors' fees, are getting a bit restive.

What's going to happen eventually is what doctors should fear most: price controls on the medical profession. — *Ottawa Herald*, Aug. 16, 1979.

Join KaMPAC

Food Faddism

Health and the Doomsday Chorus

PHILIP L. WHITE, Sc.D.*

LEWIS THOMAS suggests that preoccupation with human fragility could lead to the time when we all become doctors. "The new danger to our well-being, if we continue to listen to all the talk, is in becoming a nation of healthy hypochondriacs, living gingerly, worrying ourselves half to death."¹

The poor consumer for years has been deluged with misinformation and foolishness about the safety of foods. The safety and utility of food additives have been distorted so often that a chemical name or the word preservative on a label takes on the significance of the skull and crossbones on a bottle of iodine. Frequent attempts to establish a causal relationship between diet *per se* or dietary components such as fat, sugar and salt to heart disease, diabetes or hypertension has led to the belief that to eat a piece of bacon is an act of lunacy or an act of suicide. "Everything is suspect; nothing is wholesome"; all is coming unglued. The time cannot be far off when the bedeviled consumer throws open the window and shouts: "I've had enough; I'm not going to take any more!"

The government, which used to be the voice of moderation, now leads the doomsday chorus. Tragically, voices of reason are being muted by the techniques of political debate. Should the muted voices not be heard, greater chaos can be expected. The debate about the proposed U. S. Dietary Goals, for example, has reached the stage wherein supporters no longer listen; rather, they impugn the motives of those who question the validity of the Goals by using irrelevant, non sequitur arguments.²

We are asked to believe that the present concepts of food combinations exemplified by the four food groupings are responsible for the prevailing incidence of obesity, coronary heart disease, diabetes, hypertension and cancer. Presumably, this is because of emphasis on meat and dairy products, serving sizes notwithstanding. The effect of this allegation could be devastating for it could blow away the very underpinnings of most programs of consumer education, leaving in its place a vacuum.

Consumers who hear about but cannot understand

the difficulties of assessing food and food additive safety, particularly for assessing carcinogenesis, must be quite apprehensive about food processing in general. When cancer is associated in any way with a food chemical, it is no wonder fear becomes a partner in food purchase decisions.

The ever-present admonitions to avoid sugar, salt, cholesterol and saturated fats also cause consternation. Other distracting theses might include: food additives and hyperkinesis; low fiber diets and a host of diseases; sugar and hypoglycemia.

The net effect of the charges and countercharges could be to make health faddists of all of us. We clutch at food fibers as chaff blowing in the wind of borborygmi to prevent cancer of the colon. We avoid sugar for fear of caries and diabetes. We shun salt for fear of high blood pressure and swill vegetable oils to ward off atherosclerosis. But while doing or not doing these things, we eat too much food, smoke too many cigarettes, drink too much alcohol and exercise too little, balancing jeopardy with catastrophe, calorie for calorie.

The solution, some say, is more and better information. More and superior science would probably serve better. It is not unlike the response by a physician when asked how he would improve the diet of a young teenager: "When the patient, at age twelve, smokes heavily and drinks ten bottles of cola each day, I should try to reach her about nutrition?"

The informationalists propose that complete information be published on the food label — information about ingredients, nutrients, warnings of hazard, symbols for quick poison reference — along with everything else required on the label. More information on the food label so that people can know what they are eating is a frequent proposal. That is an unlikely resort since half of us are nearly functionally illiterate and the rest of us refuse to wear our glasses in public.

A 1971 conference on food faddism and cultism concluded that food faddism or experimentation with alternative dietary regimens are explicable on the following grounds: (1) the search for therapeutic miracles; (2) the response to fear; (3) the search for authority or rituals; (4) the aspiration for long life, "super" health or a "high"; (5) the search for

* Director, Department of Foods and Nutrition, American Medical Association, 535 N. Dearborn Street, Chicago, Ill.

“truth”; (6) the tendency to follow currently popular trends.³

The intervening years since that conference have seen three of these six *caveats* become part of consumer concerns about food and nutrition, generally. These are: the search for therapeutic miracles, the response to fear and the search for “truth.” The entire scene is unsettled and, as already stated, the net effect could be that we all become health faddists. If my analysis is reasonably correct, there is more to worry about here than with what we conventionally call food faddism. Certainly, the environment today is more conducive to food faddism and cultism than ever before.

In addition to the examples already cited in support of the contention that faddism flourishes, one could cite: the passage of the so-called Proxmire Bill in 1976 that restricts FDA’s authority to regulate dietary supplements;⁴ the legislative success of proponents of Laetrile; the economic success of the nonvitamin, pangamic acid; and the incredible public acceptance of the unproven liquid protein reducing diets until more than fifty deaths were reported to have been associated with the regimen. The public does not appear to be any more critical about health claims and products than it was 100 years ago. This is disappointing but not surprising since the media of mass communications plays on the sensational or controversial as a matter of course. In addition, the public must contend with what Mann calls “the influence of the respected but badly informed or adventurous scientist.”⁵ Mann is suggesting that the scientist who presses to make a point and exceeds his credentials and credibility adds to the confusion that leads to food faddism.

A few years ago, the FDA sponsored a population study to investigate false and questionable health beliefs and practices and the public’s susceptibility to them. The study was conducted by National Analysts, Inc.⁶ Some of the findings are rather shocking: 42 per cent of the people interviewed would not be convinced by almost unanimous expert opinion that a hypothetical “cancer cure” was worthless. Only 45 per cent thought such a medicine should be banned by law. Is it any wonder that so many people were duped by Krebiozen and are now clamoring for Laetrile?

Three-fourths of the public believe that extra vitamins provide more pep and energy. Twenty-six per cent had used nutritional supplements expecting observable benefits — without a physician’s advice.

Other major findings: “The study found that informed, systematic thinking about health is rare and that with certain exceptions, few people have an

organized set of health beliefs. While some people act on the basis of specific beliefs, true or false, many more make health decisions believing that ‘anything is worth a try.’” This is identified as “rampant empiricism.” In this approach, rational judgment is ruled out since even a total lack of scientific evidence does not eliminate the possibility that a treatment or practice may appear to benefit some users. Psychosomatic effects and unaided recovery, which occurs frequently, reinforce faith in the results assumed from this uncritical trial and error approach. Further, millions of people appear to be basing important health decisions on the idea that since there are individual differences in people, there is a chance that almost any treatment may be beneficial. In other words, because it didn’t work for you doesn’t mean that it might not work for me.

This kind of thinking helps to explain why quackery is still rampant in the United States. The unknowns of medicine fertilize the thickets of quackery. It is little wonder that the public is so easily duped by such high sounding terms as orthomolecular medicine and megavitamin therapy and is misled by the high priests of hypoglycemia. The counter-current of medicine plays in the whirlpools of the unknown with unproven remedies. And the public pays and pays and is none the better for it.

The avalanche of fraud, quackery and cultism continues on its relentless rampage, sometimes diverted, only to pick up again on a new course.

Vitamin and mineral preparations and other dietary supplements enjoy great sales with door-to-door commercialism also flourishing. The newer research on the trace minerals has been exploited by the health food set; one sees glowing claims for zinc, selenium and chromium, the last being promoted as GTF, or glucose tolerance factor. Laboratories that “evaluate” nutritional status by hair analysis flourish, as does their business in food supplements to “correct” the “metabolic imbalances” uncovered by such analysis. Admittedly useful for certain determinations, hair analysis has not yet been found appropriate for general nutritional evaluation. A most disturbing aspect is that some physicians and dentists are utilizing the “services” of hair analysis laboratories.

It used to be that free “nutritional advice” was available only in the health food store. Now one finds “advisers” in all sorts of enterprises — grocery stores, department stores and even in beauty salons. Hairdressers may try to sell dietary supplements for beautiful, lustrous hair.

Perhaps the most ubiquitous popular lecturer is Dan Dale Alexander who for twenty years has touted

cod-liver oil in milk or orange juice for arthritis or dry skin. Alexander's curriculum vitae is outlined in Deutsch's "The New Nuts Among the Berries."⁷ According to Alexander, for cod-liver oil to be "effective," timing is critical; the oil must be taken in milk an hour before breakfast in order to bypass the liver. He is a popular radio guest "charming" his audiences with descriptions of *chocolate blood* and *green elbow*. The following is a verbatim transcription of a portion of one program.⁸ "When you see the green elbow, 8 per cent of the college kids now have the green elbow; that is a very critical mistake. The green elbow is when you bypass your saliva, when you drink acids all summer long like the frozen juices and things like that, too much of the soft drinks." The positive audience response was simply unbelievable.

Deutsch⁷ and Barrett and Knight⁹ have published up-to-date books on faddism that should be required reading for the student of nutrition. The reader is referred to those sources for further details of the merchants of menace.

The fad of popular crash weight dieting is perhaps the most costly of all forms of nutrition nonsense. There seems to be little need to review this topic in detail other than to report that: Human chorionic gonadotrophin (HCG) clinics still flourish; liquid protein diets are still around; kelp, vinegar, pyridoxine and lecithin preparations remain on the market as dieting adjuncts for weight reduction; phenylpropanolamine in ineffective dosage quantities (25 mg or less) is always popular; combinations such as alginic acid, sodium carboxymethylcellulose, sodium bicarbonate, B₁ and B₂ are touted to turn off appetite on command; and finally, the endless variations of low-carbohydrate, high-fat diets regularly capture a share of the market.

The lure of "organic" and "natural" is being given credibility by the Federal Trade Commission;¹⁰ thus, in principle, the nonsense so often con-

nected with same could receive federal credentials. So many people seem now to be actively pursuing the various forms of vegetarianism that the term fad (following a practice for short periods with enthusiasm) probably no longer applies. Although the reasons given for preferring vegetarianism are sometimes spurious, the movement in that direction is gaining strength. Thus, it is important to know both why a person is a vegetarian and what form is practiced in order to assist him in the achievement of an adequate diet.

In conclusion, at a time when our national health has never been better, most of us are in danger of becoming health faddists, while the remainder actively participate in one form of food faddism or another.

References

1. Thomas, L.: Notes of a Biology Watcher: The Health Care System. *New Engl. J. of Med.* 293:1245-1246, 1975.
2. Hegsted, D. M.: *Perspective in Nutrition*. Natl. Agr. Outlook Conference, Nov. 15, 1978, Washington, D. C.
3. Council on Foods and Nutrition, American Medical Association: Conference on Food Faddism and Cultism. Unpublished data, 1971.
4. White, H. S.: Freedom of Choice. *J. Nutr. Educ.* 10:150-151, 1978.
5. Mann, G.: *Panhandle Magazine* 6:18, 1972.
6. National Analysts, Inc.: *A Study of Health Practices and Opinions*. Contract No. FDA 66-193, National Technical Information Service. Springfield, Virginia, 1972.
7. Deutsch, R. M.: *The New Nuts Among the Berries*. The Bull Publishing Company, Palo Alto, California, 1977.
8. Interview, Dale Alexander, on: Bob Collins Show. WGN Radio, 7:10 P.M., April 20, 1978. Tape from Radio TV Reports, Inc., Room 221, 1723 West Howard Street, Evanston, Illinois.
9. Barrett, S., Knight, G. (eds.): *The Health Robbers*. George F. Stickley Company, Philadelphia, Pennsylvania, 1976.
10. FTC Staff Report to FTC Commissioners. Phase I Sections of the Food Advertising Trade Regulations, November 29, 1978. *Food Chemical News* 20:9, No. 38, December 4, 1978.

Reprinted with permission from *Contemporary Nutrition* 4:2, February 1979, published as a public service for General Mills, Inc., P. O. Box 1113, Minneapolis, MN 55440.



AMERICAN MEDICAL ASSOCIATION 1979 INTERIM MEETING OF THE HOUSE OF DELEGATES

Honolulu, Hawaii

December 2-5, 1979



Our FULL SERVICE BANKTM offers you more than a checking and savings account. We are medically oriented and offer a full range of services designed just for you, Doctor.

AT CENTRAL BANK & TRUST, WE'VE GOT IT ALL!

- Leasing • IRA • Lock Box
- KEOGH (HR10)
- Safe Deposit Boxes
- Money Market Certificates
- Certificates of Deposits
- Trust Department
- International Banking
- And More...



Main Bank / 3433 E. Central • Central Two
First and Hillside • Central Northwest
21st and Amlon • All locations: 316-686-7111
Wichita, Kansas 67201 • Member F.D.I.C.



***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; everything in order — accurately!



***"Let
MAC
do it"***

Serving over 150 Professional Clients

Mid-America Computing, Inc.

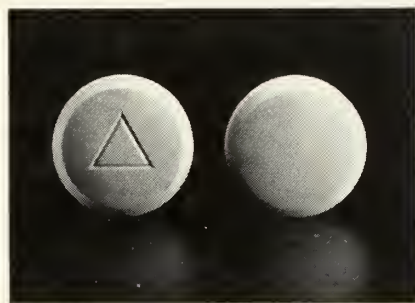
12345 West 95th Street, Shawnee Mission, Kansas 66215
2300 East Lincoln, Wichita, Kansas 67211

• (913)492-8805
• (316)261-5586

The Maker

Examining a Few Myths About Prescribing.

Increasing pressure is being put on the practicing physician to prescribe drugs generically. You are told that brand-name products are universally “expensive” and generic versions are relatively “cheap.” To make this case, the most extreme (rather than typical) price differentials are cited. Thus, consumers are led to believe that such differentials are commonplace. Even your knowledge and your motives as a physician are questioned.



Understandably, these views have created myths. We think it's time to examine them in the light of all the facts and ramifications.

MYTH: There are no differences in quality and performance between brand-name products and their generic counterparts. The corollary is that there are no differences among products made by high-technology, quality-conscious, research-based companies and those made by commodity-type suppliers.

FACT: The Food and Drug Administration does a good job in monitoring a generally excellent drug supply. Still, it has nowhere near the resources to guarantee the quality and bioavailability of all marketed products at any given time. Just a few months ago, for example, it noted that batches of tetracycline HCl capsules which met official monograph requirements were

not bioequivalent to a reference product. As you know, there is substantial literature on this subject affecting many drugs, including such antibiotics as tetracycline and erythromycin. The record of drug recalls and court actions affirms strongly that there are differences among pharmaceutical companies and their products. Research-intensive companies have far better records than those that do no research and may practice minimum quality assurance.

MYTH: Industry favors only “expensive” brand names and denigrates all generics.

FACT: PMA companies make 90 to 95 percent of the drug supply, including, therefore, most of the generics. Drug nomenclature is not the important point; it's the competence of the manufacturer and the integrity of the product that count.

Matters.

MYTH: Generic options almost always exist.

FACT: About 55 percent of prescription drug expenditure is for single-source drugs. This means, of course, that for only 45 percent of such expenditure, is a generic prescribing option available.

MYTH: Generic prescriptions are filled with expensive generics, thus saving consumers large sums of money.

FACT: Market data show that you invariably prescribe—and pharmacists dispense—both brand and generically labeled products from the same own and trusted sources, in the best interests of patients. In most cases the patient receives the proven brand product. Savings from voluntary mandated generic prescribing are grossly exaggerated.

MYTH: Drugs account for a major portion of the rise in health care costs.

FACT: Drugs represent a very small part of such costs. The amount of the health care dollar spent for prescription drugs was about 12 cents in 1967; today it is about 8 cents. And you as a physician are most conscious of how drug therapy can cut hospitalization, avert surgery, reduce office visits and keep patients on the job.

MYTH: Government intrusions into the marketplace will save tax money.

FACT: Government schemes always cost the taxpayer something, and the costs often exceed the benefits. Certainly, any federal “help,” such as lists of wholesale drug prices sent to all physicians and pharmacists, will be no exception. Just think of the expense of keeping them current! Moreover, wholesale prices are poor guides to actual transaction prices and even worse guides to retail prices.

The PMA Position

We believe your freedom to prescribe, either by generic or brand name, should be totally unabridged. Otherwise, your prescribing prerogatives and your relationships with patients will be seriously impaired.

The maker does matter

After the myths about price and equivalency have been shattered, one fact stands out more clearly than ever: *The maker does matter.* As always, your best guide to drug therapy for your patients is to select products—both brands and generics—from manufacturers with credentials and performance records you have come to respect.



Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

Vox Dox

Vox Dox Editor:

When utilizing a knitted graft for arterial surgery, occasionally one encounters troublesome seepage of blood from the graft itself. This can be prevented with the following easy step.

The interstices in the knitted graft are usually readily sealed with fibrin when blood comes into contact with it. However, these sealed spaces are quite often re-opened by a common mistake; that is, clamping the end of the graft and allowing blood to fill the graft. By doing so, the air trapped within the graft is immediately forced through the interstices, thus re-opening the sealed spaces. One can avoid this if the graft is allowed to fill with blood without clamping the end, so that the air within has a chance to be evacuated through the open end. The end of the graft can now be safely clamped and one will find that there is minimal seepage of blood from the graft.

S. K. GANDHI, M.D.
631 Horne, Suite 428
Topeka, KS 66606

Deus ex machina — sometimes

(Continued from page 565)

joyed, beside its obvious assistance, the aura of wisdom it created for them. The patient was impressed that the physician had such tools, that he apparently understood them, and that the ultimate benefit would be of a high order. Hang the expense.

The result for many physicians is a state of ambivalence which will persist until they arrive at a comfortable relationship with their mechanical and electronic helpmeets — their effectiveness *and* their cost. At the moment, the position of the physicians suggests that of the children who are being studied so thoroughly (and so far inconclusively) in regard to the effect of TV on their plastic psyches. Even if it turns out that it's bad, how are you going to get it away from them? — D.E.G.

Tenuate [®]

(diethylpropion hydrochloride NF)

Tenuate Dospan [®]

(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma, Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect, rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle, the patient should therefore be cautioned accordingly. *Drug Dependence* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression, changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children* Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS *Cardiovascular* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache, rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic* Urticaria, rash, ecchymosis, erythema. *Endocrine* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION Tenuate (diethylpropion hydrochloride) One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release. One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine[®]) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.
Licensor of Merrell[®]

References: 1. Citations available on request from Medical Research Department, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M. T., O'Dillon [Dillon], R. H., and Leyland, H. M. A comprehensive review of diethylpropion hydrochloride. In: *Central Mechanisms of Anorectic Drugs*, S. Garattini and R. Samanin, Ed., New York, Raven Press, 1978, pp. 391-404.

Merrell

9-4672 (1975A)

**Overweight may not always be simple...
complications can develop*.
Complicated or not...**

Tenuate[®] Dospan[®] ^{IV}C

(diethylpropion hydrochloride NF)
75 mg. controlled-release tablets

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict appetite control and a successful program of weight reduction may tend to diminish the incidence or severity of the complications in some patients. Diethylpropion hydrochloride has been reported useful in such patients and while it is not suggested that Tenuate itself in any way reduces the complications of overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. **Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.**

In uncomplicated overweight.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.¹ And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."² Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.
And it's responsible medicine.**

*Studies have shown that obesity is associated with an increased incidence of hypertension, symptomatic heart disease, adult-onset diabetes, and other diseases.

Merrell

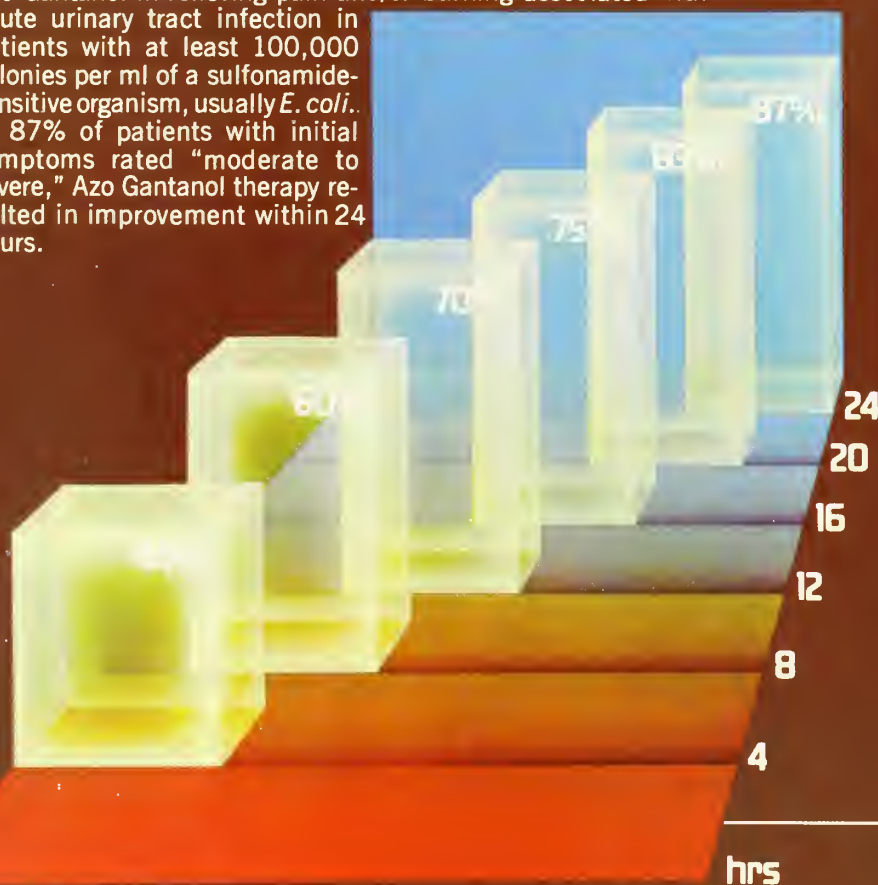


For prescribing information see opposite page.

Important data on the pain of acute cystitis:

In 87% of patients studied (303 of 349), Azo Gantanol® reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli*. In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Fast pain relief plus effective antibacterial action

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for
the pain

for
the pathogens

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli*, *Klebsiella-Aerobacter*, *Staphylococcus aureus*, *Proteus mirabilis*, and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note:** Fully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; aminobenzoic acid to follow-up culture media, increasing frequency of resistant organisms limit the usefulness of antibacterials including sulfonamides. Measure sulfonamide blood levels; variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergic bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruption, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, peri-orbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pain, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused many instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute painful phase of urinary tract infections. **Usual adult dosage:** 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists causes other than infection should be sought. After relief of pain has been obtained, continue treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.



Roche Laboratories
Division of Hoffmann-La Roche
Nutley, New Jersey 07110

AMA House of Delegates

Summary of Actions Taken at the Annual Meeting, Chicago, Illinois

Kansas medicine was represented at this AMA meeting by a full complement of its delegation. Those officially representing the Kansas Medical Society were: Donald D. Goering, M.D., President; two delegates and their alternates; and Jerry Slaughter, Executive Director. Other Kansas physicians, voting members of the AMA House of Delegates, were: William J. Reals, M.D., Wichita, representing the American College of Pathology; and Ralph Hale, M.D., Wichita, American Society of Allergists.

The House considered 262 resolutions and reports, touching on virtually every issue of importance to the practicing physician. Because of space limitations, only those matters which are believed to be of utmost interest to Kansas physicians are reported below. If you would like to have the details on other discussions, please get in touch with one of your delegates listed below.

Accreditation of CME Programs

The AMA voted to drop its membership in the Liaison Committee on Continuing Medical Education (LCCME), and revert to its role as primary accreditor of CME-sponsoring organizations. The LCCME began accrediting sponsors of CME activities in 1977, and for the ten years before that the AMA had done the job. The LCCME accredits about 1700 sponsoring organizations at an operational cost of approximately \$500,000/year, of which the AMA paid more than half. AMA also provided staff for the LCCME.

The action taken by the House of Delegates means state accrediting agencies (state medical societies) could immediately begin to accredit intrastate CME courses using guidelines which have been written by the Council on Medical Education and adopted by the LCCME. At issue was the right of state medical societies to accredit local CME activities without having to seek higher approval, and years of disagreement over that issue convinced members of the House of Delegates that it was time for the AMA to pull out. AMA has made it clear that they would continue to honor accreditation of CME sponsored by the LCCME until the terms of those accreditations expire.

National Health Insurance

The AMA Board of Trustees has been given a vote of confidence for its conduct of AMA policy on national health insurance. That policy, briefly, is to maintain the high quality of medical care within the framework of private insurance. The current emphasis is to work within the four principles outlined by Resolution 62, which was adopted at the 1978 interim meeting.

During floor action on the issue, the Nebraska delegation offered an amendment urging that the AMA "oppose any and all federally controlled compulsory health insurance programs." The amendment failed, although it had the support of the Kansas, Texas, Oklahoma, South Carolina, and Illinois delegations.

The 1978 principles relating to NHI, reaffirmed by the House, are as follows:

AMA delegates at the 1979 Annual Meeting reaffirmed the resolution they adopted last December, and referred it to the board with authority to cause to be introduced in Congress a draft health insurance bill "only if necessary." That resolution embodies four principles:

"1. Requiring minimum standards of adequate benefits in all health insurance policies sold in the United States with appropriate deductible and co-insurance.

"2. A simple system of uniform benefits provided by the federal, state, and local governments for those individuals who are unfortunate enough (through no fault of their own, i.e., age, disability, financial hardship, etc.) not to be able to provide for their own medical care.

"3. A nationwide program by the private insurance industry of America (and government if necessary for reinsurance) to make available catastrophic insurance coverage for those illnesses and individuals where the economic impact of a catastrophic illness could be tragic. All catastrophic coverage should have an appropriate deductible and co-insurance to make it economically feasible and to avoid abuse.

"4. A program developed pursuant to those principles should be administered at the state level with

national standardization through federal guidelines."

Chiropractic

The AMA, which is currently involved in four restraint-of-trade lawsuits involving chiropractors, abandoned its blanket condemnation of chiropractic as an "unscientific cult." The board report adopted in Chicago recommends against the use of the term "unscientific cult" for describing chiropractic. The report, however, reaffirms the traditional medical viewpoint that chiropractic is unsupported by scientific evidence.

The old AMA policy (1966) on chiropractic stated that voluntary association with cultists is unethical, and the new policy statement says that a physician may refer a patient to "a licensed limited practitioner whenever he believes that this will benefit the patient." The report goes on to state "referrals to limited practitioners should be based on their individual competence and ability to perform the services needed by the patient." The policy position preserves the right of every physician to choose those persons whom he/she will accept as patients.

Membership

Responding to the need to broaden the AMA membership base in keeping with the growth of the physician population, the Council on Long Range Planning and Development submitted a comprehensive report recommending direct recruitment of members. The report also asks for the endorsement of the concept of the AMA as an organization of the medical organizations or, in other words, institutional rather than individual membership.

The House voted to authorize the Board of Trustees to conduct limited pilot studies for recruiting and accepting members directly without the necessity of having to go through the state medical societies.

These pilot studies would go into effect on May 1, 1980.

The House also called for additional studies and development of the "Organization of Organizations" concept, whereby a state medical association would become an organizational member of the AMA. The Council on Long Range Planning and Development will consult with constituent and component societies in the preparation of mutual reports on this concept.

In other actions, the House:

- endorsed a major campaign to reduce cigarette smoking;
- adopted a series of guidelines for coronary bypass surgery;
- received a warning that the House can expect a request for a dues increase in 1980 for implementation during the following year unless there is a significant increase in membership;
- adopted an emergency resolution calling on the AMA to explore the adoption of a program to aid Viet Nam refugees known as "boat people";
- reaffirmed the AMA's commitment to the program for voluntary restraint of physician fee increases.

Please let your delegation members know your views on issues that affect your practice so that we can bring your thoughts to the House. The interim session will take place December 2-5, 1979, in Honolulu, Hawaii. All members are invited to attend and express your views in the Reference Committee meetings.

CLAIR C. CONARD, M.D., *Delegate*
ALEX SCOTT, M.D. *Delegate*
LEW W. PURINTON, M.D., *Alternate*
KERMIT G. WEDEL, M.D., *Alternate*

PHYSICIAN LIBERATION

Have you found full-time practice all consuming with little time for yourself and family? Liberate yourself. Enjoy Rural America and the practice of medicine by joining our locum tenens staff. Individually tailored, these positions give you the time to enjoy life. The demand for this service is so great that we are expanding our staff of qualified family practitioners. Provide care where it is needed and appreciated and we'll make sure you don't have to retire or drop out to enjoy life to its fullest.

For further information call or write to:

Charles M. Gluck, M.D.
Office of the Medical Director
2414 West 7800 South, Suite 202
West Jordan, Utah 84084
1-(800) 453-6403

MEDICAL EQUIPMENT NEEDS LOVING CARE TOO

centrifuges; autoclaves; electrocardiographs; scissors; spectrophotometers; otoscopes; ophthalmoscopes; stethoscopes; ultrasonic, short wave and microwave diathermies; electronic and manual sphygmomanometers; suction machines; microscopes; electroencephalographs; traction machines; operating tables; manual and electric wheelchairs; beds; examining tables; operating lights; examining lights; electrosurgical units; isolated power systems; telemetry patient monitoring systems; blood analyzers; fetal monitors; defibrillators; muscle stimulators; surgical equipment and instruments of all types; & more!

sharpening
straightening
repair
calibration
safety inspection
preventive maintenance

FOR SERVICE,
SEND EQUIPMENT TO:
QUESTIONS?
CALL (913) 582-4642
COLLECT!

HOSPITAL
INSTRUMENT
SERVICE CO.

201 West Railroad Avenue
Silver Lake, Kansas 66539

SERVING MEDICAL DEVICE MAINTENANCE NEEDS

★
Specialized Service

IN
PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction

Since 1899

THE
MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

Editor
The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612

When Is a Diabetic?

(Continued from page 563)

Answers

1. *False*
2. *True*
3. *True*
4. *False*
5. *d*

USE YOUR MEDICAL
 LIBRARIES

YOUR LIBRARIAN WILL BE

HAPPY TO ASSIST YOU

QuinammTM

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS: For the prevention and treatment of nocturnal recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis, and static foot deformities.

CONTRAINDICATIONS: Because of the quinine content, Quinamm is contraindicated in women of childbearing potential, in pregnancy, in patients with known quinine sensitivity, and in patients with glucose-6-phosphate dehydrogenase deficiency. Hemolysis (with the potential for hemolytic anemia) has been associated with a G-6-PD deficiency in patients taking quinine.

PRECAUTIONS: Thrombocytopenic purpura may follow the administration of quinine in highly sensitive patients. Recovery will follow withdrawal of the medication. Cinchona alkaloids, including quinine, have the potential to depress the hepatic enzyme system that synthesizes the vitamin K-dependent factors. The resulting hypoprothrombinemic effect may enhance the action of warfarin and other oral anticoagulants.

ADVERSE REACTIONS: Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. If ringing in the ears, deafness, skin rash, or visual disturbances occur, the drug should be discontinued.

DOSAGE AND ADMINISTRATION:

1 tablet upon retiring. When necessary, 1 additional tablet may be taken following the evening meal.

Product Information as of September, 1977

U.S. Patent 2,985,558

Merrell

MERRELL-NATIONAL LABORATORIES Inc.
 Cayey, Puerto Rico 00633

Direct Medical Inquiries to:
 MERRELL-NATIONAL LABORATORIES
 Division of Richardson-Merrell Inc.
 Cincinnati, Ohio 45215, U.S.A.

Licensors of Merrell®



for Knotts in the night



QuinammTM

each tablet contains quinine sulfate 260 mg., aminophylline 195 mg.

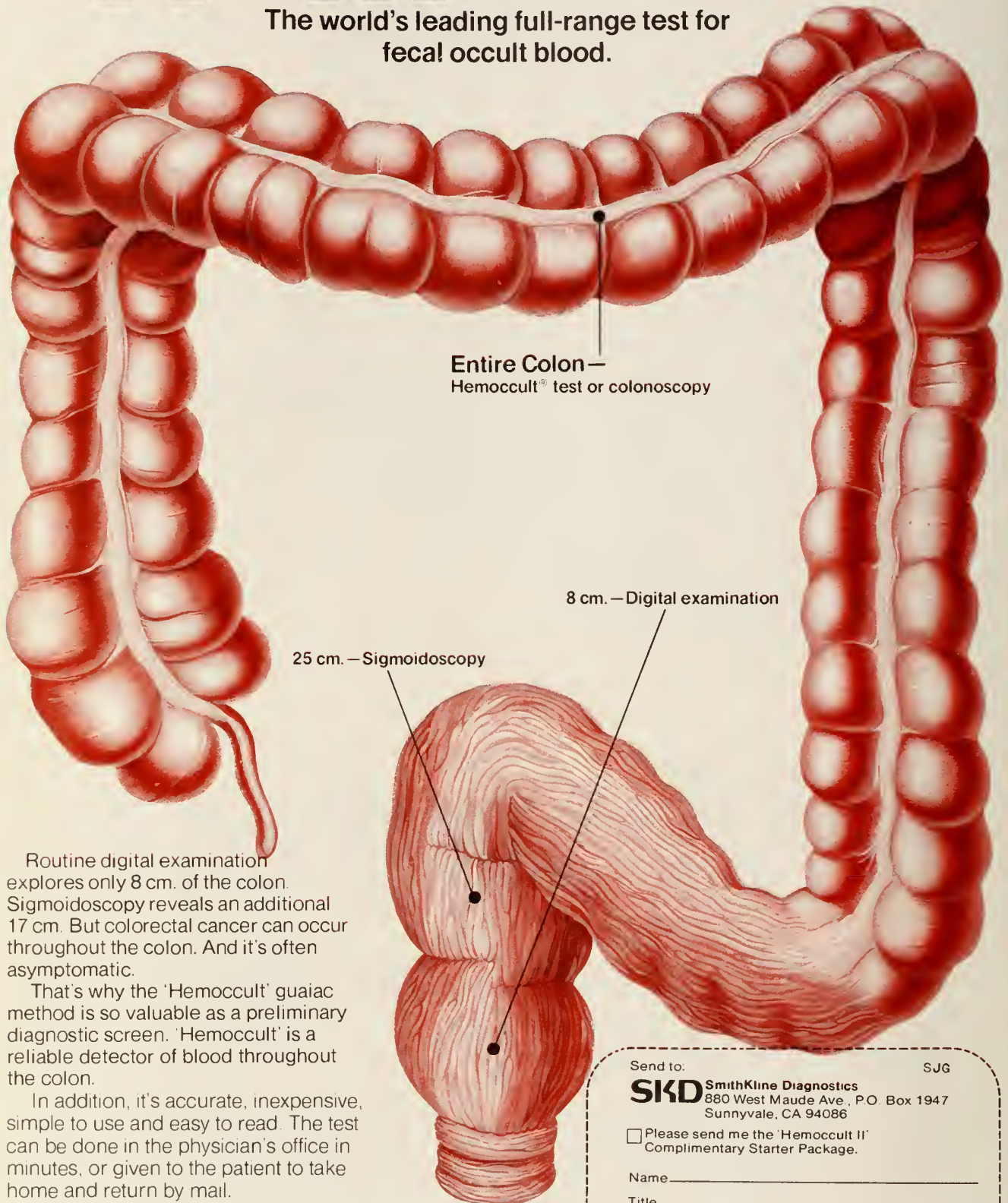
specific therapy for painful night leg cramps

Nocturnal recumbency leg muscle cramping is frequently an unwelcome bedfellow for many patients—especially those with arthritis, diabetes or peripheral vascular disease... consider Quinamm... simple, convenient dosage—usually just one tablet at bedtime... can provide restful, welcome sleep without night leg cramps.

See opposite page for prescribing information.

Hemoccult[®]

The world's leading full-range test for
fecal occult blood.



Routine digital examination explores only 8 cm. of the colon. Sigmoidoscopy reveals an additional 17 cm. But colorectal cancer can occur throughout the colon. And it's often asymptomatic.

That's why the 'Hemoccult' guaiac method is so valuable as a preliminary diagnostic screen. 'Hemoccult' is a reliable detector of blood throughout the colon.

In addition, it's accurate, inexpensive, simple to use and easy to read. The test can be done in the physician's office in minutes, or given to the patient to take home and return by mail.

More than 112,000 cases of colorectal cancer will occur in the United States this year. The earlier they are diagnosed, the greater the chances for successful treatment.

'Hemoccult' is available through local distributors, nationwide.

Send to:

SJG

SKD SmithKline Diagnostics
880 West Maude Ave., P.O. Box 1947
Sunnyvale, CA 94086

☐ Please send me the 'Hemoccult II'
Complimentary Starter Package.

Name _____

Title _____

Institution _____

Address _____

City _____ State _____ Zip _____

Phone _____

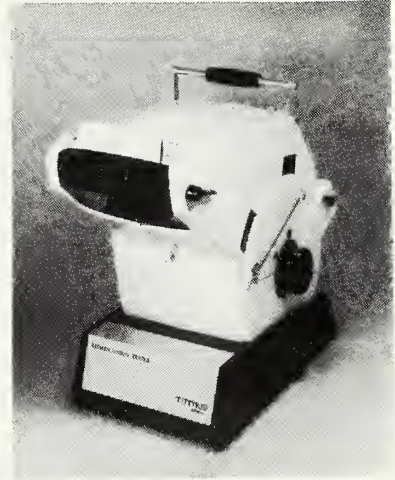
VISION TESTER

BY Titmus

This professional model tests vision for:

preschool & illiterate children
primary grade children
older children & adults
FAA examinations

to arrange a demonstration in your office contact your local Goetze-Niemer salesman or call



The GOETZE-NIEMER Co.

1701 Brooklyn, K.C., MO. 816-231-1900
serving the Midwest since 1884

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

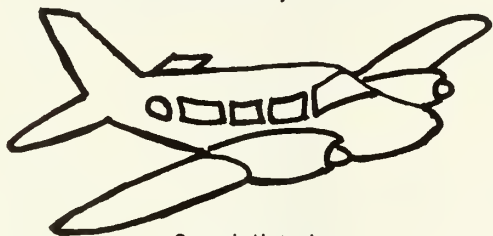
TEST	RESULT	REFERENCE
GLUCOSE	100 mg/dl	80-120
BUN	8.25	8-20
UREA NITROGEN	12.5	8-20
CREATININE	1.2	0.8-1.2
ALBUMIN	4.5	3.5-5.5
ALB/GLOB	1.2	1.0-2.0
TOTAL BILIRUBIN	1.2	0.2-1.2
ALANINE AMINOTRANSFERASE	12.5	0-40
ASPARTATE AMINOTRANSFERASE	12.5	0-40
ALPHA-1-GLOBULIN	1.2	0.8-1.2
ALPHA-2-GLOBULIN	1.2	0.8-1.2
GAMMA-GLOBULIN	1.2	0.8-1.2
IMMUNOGLOBULIN G	1.2	0.8-1.2
IMMUNOGLOBULIN A	1.2	0.8-1.2
IMMUNOGLOBULIN M	1.2	0.8-1.2
IMMUNOGLOBULIN D	1.2	0.8-1.2
IMMUNOGLOBULIN E	1.2	0.8-1.2
IMMUNOGLOBULIN F	1.2	0.8-1.2
IMMUNOGLOBULIN G	1.2	0.8-1.2
IMMUNOGLOBULIN A	1.2	0.8-1.2
IMMUNOGLOBULIN M	1.2	0.8-1.2
IMMUNOGLOBULIN D	1.2	0.8-1.2
IMMUNOGLOBULIN E	1.2	0.8-1.2
IMMUNOGLOBULIN F	1.2	0.8-1.2

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

 **THE LATTIMORE-FINK LABORATORIES, INC.**
A DAMON LABORATORY

115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621

Allen County Aviation, Inc.



Specialists in

Stabilized Patient Transfers

in

Single and Multi Engine Aircraft

includes

Nursing • Suction • Oxygen

for quotes between

Continental United States Cities

Call Collect: (316) 365-6783

(Our aircraft provide sufficient room for patient, two persons and crew.)

21st AMA NATIONAL CONFERENCE ON THE MEDICAL ASPECTS OF SPORTS

SAN ANTONIO CONVENTION CENTER

San Antonio, Texas

January 12, 1980

Approved for Category I Credit toward AMA Physician's Recognition Award for Continuing Medical Education, and 7 (seven) elective hours, American Academy of Family Physicians.

For information, contact Jack A. Bell, American Medical Ass'n, 535 Dearborn Street, Chicago, IL 60610.

Brief Summary of Prescribing Information

Indications and Usage: Symptomatic relief of anxiety, tension, agitation, irritability, insomnia associated with anxiety neuroses and transient situational disturbances; associated with depressive symptoms and as a treatment of symptoms of anxiety if symptoms are a significant feature of functional or organic disorders, particularly gastrointestinal and cardiovascular.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all acting drugs, warn patients on lorazepam not to operate machinery or motor vehicles, diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Tolerant individuals, e.g., drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid sedation.

Terminate dosage gradually since abrupt withdrawal of any anti-anxiety agent may produce symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions.

Observe usual precautions with impaired renal or hepatic function.

Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular conditions.

Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (approximately 6 times the maximum therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatric patients requires caution and frequent monitoring for symptoms of upper GI disease.

Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia, some have elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressive effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of monkeys. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastrocnemius malformation and microphthalmia) were seen in drug-treated rabbits without relation to dosage. Although all these anomalies were not present in the concurrent control group, have been reported to occur randomly in historical controls. At 40mg/kg and higher, the evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloridiazepoxide, diazepam, meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this should almost always be avoided. Possibility that a woman of child-bearing potential is pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug.

In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug if many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (11.7%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, seasickness, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, function disturbance, various gastrointestinal symptoms and autonomic manifestations: dependence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Overdosage: In management of overdosage with any drug, bear in mind that multiple overdoses may have been taken. Manifestations of overdosage include somnolence, confusion and induction of vomiting and/or undertake gastric lavage followed by general supportive care, monitoring of vital signs and close observation. Hypotension, though unlikely, usually may be corrected with Levartelenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

Ativan[®] IV
for (lorazepam)
Anxiety

Dosage: Individualize for maximum beneficial effects. Increase gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dose may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

How Supplied: 0.5, 1.0 and 2.0mg tablets.

Wyeth Laboratories
Philadelphia, PA 19101



Why one benzodiazepine and not another?

Are you concerned about long-acting metabolites? Many clinicians, as well as pharmacologists, are beginning to draw attention to this problem (see New England Journal of Medicine, April 5, 1979).

In contrast to some older benzodiazepines, Ativan (lorazepam) does not give rise to long-lasting active metabolites. As with all benzodiazepines, you should follow the usual precautions concerning co-administration with other CNS depressants and warn your patients against operating dangerous machinery and motor vehicles.

However, it is noteworthy that Ativan showed no clinical evidence of accumulation even when given in high doses over periods up to 6 months. The half-life of free lorazepam is about 12 hours; steady-state serum levels are attained in 2-3 days. Comparable data for diazepam: 20-50 hours and at least 7-10 days. (The pharmacokinetic profile of a drug can define such characteristics as absorption, distribution, metabolism and elimination but cannot, at present, be directly related to its therapeutic effectiveness.)

Ativan has a convenient b.i.d. or t.i.d. dosage schedule; it is compatible with a long list of other medications and, of course, it is a highly effective anxiolytic agent, as established in numerous nationwide, double-blind, controlled evaluations in thousands of patients.



See important information on preceding page.

Ativan[®] for (lorazepam) Anxiety

INDEX TO ADVERTISERS

Allen County Aviation, Inc.	582
Beltone Electronics Corporation	533
Burroughs Wellcome Company	534
Capitol Federal Savings & Loan Ass'n	584
Central Bank & Trust	573
Ear Problems Workshop	559
Goetze-Niemer Company	581
P. W. Hanicke Manufacturing Company	538
Health Systems	578
Hospital Instruments Service Co.	579
Huaman Pathology Laboratory	532
Kansas Gold & Silver Exchange	538
Lattimore-Fink Laboratories	581
Eli Lilly and Company	536
Loma Linda Foods	531
Medical Protective Company	579
Merck Sharp & Dohme	532d
Merrell-National Laboratories	
..... 536b, 537, 538, 576, 576a, 580, 580a	
Mid-America Computing	573
Midwest Piper Flight Inc.	542
Munns Medical Supply Company	532
Pharmaceutical Manufacturers Ass'n	574, 575
Purepac Pharmaceutical Co.	541
Roche Laboratories 530, 576b, C3, C4	
Smith Kline Diagnostics	580b
Smith Kline & French	536a
The Upjohn Company 532a, 532b, 532c, 532d	
Wyeth Laboratories	582, 583

CLASSIFIED ADVERTISEMENTS

OPHTHALMOLOGIST RETIRING. Wants to sell building & practice. Excellent real estate investment. In practice 31 years. 95% collection rate. Located Jacksonville, gateway city to Florida & its largest. Call (904) 398-0354 after 8:30 p.m.

FOR SALE: Mimeograph machine in good working order. Also sound-scriber equipment—2 recorders, 1 transcriber, working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

GREAT BEND — EMERGENCY MEDICINE PRACTICE available July 1, Mon-Thurs evenings, 5 PM-5 AM. Paid professional liability insurance, excellent specialty back-up, modern hospital, guaranteed annual income, \$50,000. Contact Tom Cooper, M.D., 1-800-325-3982.

FAMILY PHYSICIAN wanted to associate with young practitioner in one year old practice in central Nebraska. Prefer A.B.F.P. Sixty bed hospital adjacent to new office building in rural community of 6,000. Full hospital privileges. Good schools, recreation nearby. Contact Michael L. Westcott, M.D., A.B.F.P., 1315 Tibbals St., Holdrege, NE 68949, 308/995-6111.

WANTED: Whirlpool in good condition. Also hydraulic lift. 1-316-262-4473.

USE YOUR MEDICAL LIBRARIES

Doctor, here are 100% deductible retirement plans!

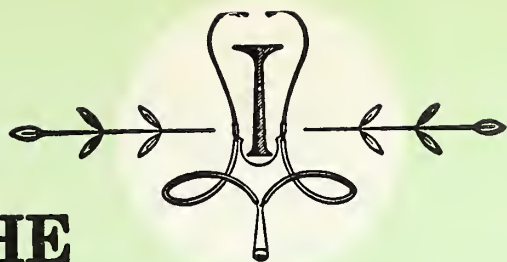
You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a **KEOGH RETIREMENT PLAN** at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar **IRA PLAN** contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"



THE
Journal

OF THE

Kansas
Medical
Society

NOVEMBER
1979



(ISSN 0022-8699)

VOL. LXXX
NO. XI

LIBRARY
U.C. SAN FRANCISCO

NOV 26 1979

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for November

Scientific Articles

- Paget's Disease: Intense Calvarial Localization of Gallium-67
— Norman L. Martin, M.D.; Ralph G. Robinson, M.D.;
and David F. Preston, M.D., Kansas City, Kansas . . 597
- Slow-Virus Diseases: A Concise Review — Abbas M.
Behbehani, Ph.D., Kansas City, Kansas 600
- Fibrinogen Uptake Test: Critique of Its Clinical Value —
Erich W. Pollak, M.D., and Kenneth Barat, R.T., Kan-
sas City, Missouri 605
- Special Series — IV: Estrogen Receptors in Breast Carcinoma
— Antonio Huaman, M.D., Topeka 609

Current Comment

- Malignant Hypertension — Virginia Savin, M.D., Kansas
City, Kansas 612

Miscellaneous

- Advertisers 632
- Auxiliary News 585
- Classified Advertisements 632
- Editorial Comment: *Face in the Crowd* 617
- Impaired Physician Program Resource List 589
- Information for Authors 624
- Obituaries 619
- Officers and Councilors 625
- Personalities 629
- President's Message 616

Address all correspondence to the
JOURNAL OF THE KANSAS MEDICAL SO-
CIETY, 1300 Topeka Avenue, To-
peka, Kansas 66612; 913-235-2383.
Manuscripts should be submitted to
the Managing Editor. Refer to
"Information for Authors" for
details.

Editor: David E. Gray, M.D., 1300 To-
peka Avenue, Topeka 66612.

Editorial Board: David E. Gray, M.D.,
Editor; Richard H. Greer, M.D., To-
peka; M. Martin Halley, M.D., To-
peka; Donald R. Pierce, M.D., To-
peka; John A. Segerson, M.D., To-
peka.

Associate Editors: Jesse D. Rising,
M.D., Kansas City; Robert T. Man-
ning, M.D., Wichita.

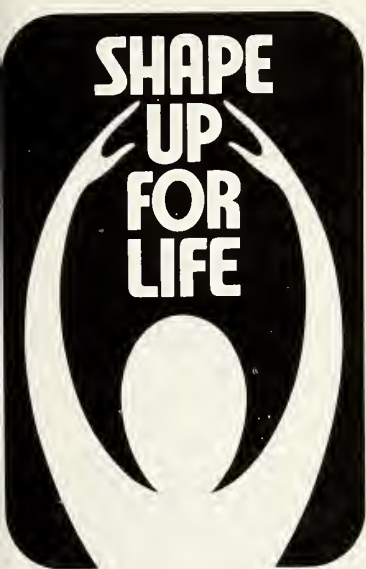
Editorial Consultant: Orville R. Clark,
M.D., St. Petersburg, FL.

**Managing Editor and Advertising
Manager:** Val Braun, M.P.A.;
Editorial Assistant: Eleanor Bell,
1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter,
1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is
made to publish only accurate arti-
cles and legitimate advertisements,
the JOURNAL denies legal responsi-
bility for statements, opinions, or
advertisements appearing under
the names of contributors or con-
cerns.

THE JOURNAL is published monthly by
the Kansas Medical Society, 1300
Topeka Avenue, Topeka, Kansas
66612. A year's subscription is in-
cluded in membership in the Kan-
sas Medical Society, with \$10.00 of
each member's dues apportioned to
the JOURNAL. Rates to others, except
in foreign countries, \$10.00 per
year; single copies \$1.50; rosters
\$10.00. Printed by The Ovid Bell
Press, Inc., Fulton, Missouri.
Second-class postage paid at To-
peka, Kansas, and at additional
mailing offices. POSTMASTER:
Send address changes to Kansas
Medical Society, 1300 Topeka Av-
enue, Topeka, Kansas 66612.



American Medical Association Auxiliary
535 No. Dearborn St., Chicago, IL 60610

Auxiliary News

The participants were offered four leadership seminars on the first day. Each attendant selected two 80-minute sessions. These seminars were designed to strengthen leadership and were led by experts in their respective fields. Following this we were all privileged to hear Dr. Hoyt Gardner, AMA President, and Dr. James H. Sammons, AMA Executive Vice-President, who spoke to us on "Issues Facing American Medicine." On the second day, each participant selected four of eight topic seminars to attend. These seminars were potential community action programs. All in all, it was a very concentrated two days, but also very worthwhile for all of us who attended. Now we hope to share and put into action the many ideas we grasped.

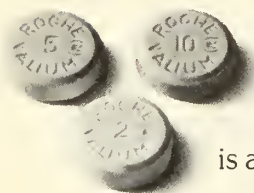
The work at the state level is continuing full speed ahead. Most of the county auxiliaries are meeting and working hard on membership and their community projects. Evelyn Huff and myself have enjoyed visiting the auxiliaries of Harvey and Shawnee counties. As the fall months go by, we will be attending many more county and district meetings.

I would offer one last plea to ask your spouse to join your county, state, and national auxiliary. The Kansas Medical Society has 2600 members — the Kansas Medical Society Auxiliary only 1300 members. The dues? — \$7 state and \$7 national — at that price you have nothing to lose and much to gain, as "we *can* do more together." Help us to help you strengthen the image of the physician through added membership!

Sincerely,
Kathy Wedel
President
Kansas Medical Society Auxiliary

The 1979 Leadership Confluence was held October 7-9, at the Drake Hotel in Chicago. This confluence is held specifically for state presidents, state presidents-elect, and a selected group of county presidents-elect from each state. The National Board of Directors and members of standing and extension committees are also in attendance. Each state is allowed a quota of county presidents-elect, determined by number of state members of the AMA Auxiliary. We were very proud to have the following Kansas Auxilians attend: Mrs. William (Kay) Campbell, Coffeyville, representing Southeast Counties; Mrs. Clell (Twila) Flowers, Wichita, Sedgwick County; Mrs. Fred (Carolyn) Gilhousen, Kansas City, Wyandotte County; and Mrs. Wallace (Pam) Weber, Hays, Central Kansas. Mrs. John (Evelyn) Huff, our state president-elect, and I also represented Kansas.

A character all its own.



Valium (diazepam/Roche) is a benzodiazepine with a character all its own.

Pharmacologically, it is a potent skeletal muscle relaxant and anticonvulsant (in adjunctive use), as well as an antianxiety agent. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

But the individual character of Valium is even more apparent clinically than pharmacokinetically. And far more significant. That's because of the patient response obtained with Valium. A response which brings a calmer frame of mind. A response which has a pronounced effect on the somatic symptoms of anxiety, particularly muscular tension. A response which helps the patient feel more like himself again because of the way Valium reduces the overwhelming symptoms of anxiety and psychic tension.

Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving, operating dangerous machinery or the simultaneous ingestion of alcohol.

Unquestionably, many psychotherapeutic agents, including other benzodiazepines, have antianxiety effects. But one fact remains: you get a certain kind of patient response with Valium. It's a response you want. A response you know. A response you trust as part of your overall management of anxiety and psychic tension.

Valium®^{IV}
diazepam/Roche
2-mg, 5-mg, 10-mg scored tablets
**a prudent choice in psychic
tension and anxiety**

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

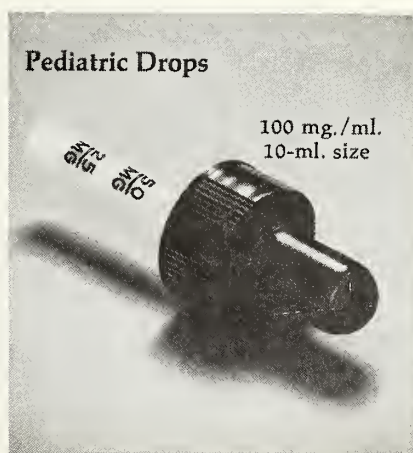
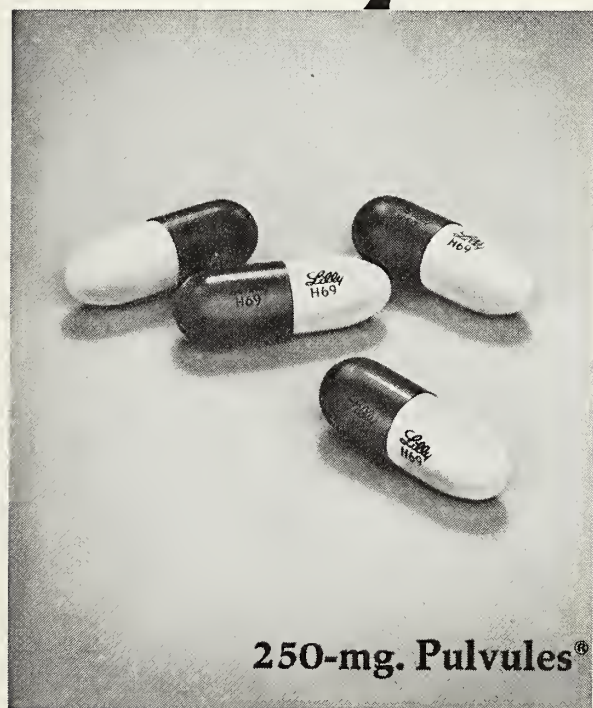
Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50, available singly and in trays of 10.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

easy to take



Keflex®
cephalexin



500738

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

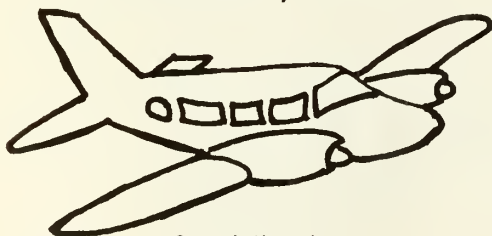
Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

Allen County Aviation, Inc.



Specialists in

Stabilized Patient Transfers

in

Single and Multi Engine Aircraft

includes

Nursing • Suction • Oxygen

for quotes between

Continental United States Cities

Call Collect: (316) 365-6783

(Our aircraft provide sufficient room for patient, two persons and crew.)

QuinammTM

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS: For the prevention and treatment of nocturnal recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis, and static foot deformities.

CONTRAINDICATIONS: Because of the quinine content, Quinamm is contraindicated in women of childbearing potential, in pregnancy, in patients with known quinine sensitivity, and in patients with glucose-6-phosphate dehydrogenase deficiency. Hemolysis (with the potential for hemolytic anemia) has been associated with a G-6-PD deficiency in patients taking quinine.

PRECAUTIONS: Thrombocytopenic purpura may follow the administration of quinine in highly sensitive patients. Recovery will follow withdrawal of the medication. Cinchona alkaloids, including quinine, have the potential to depress the hepatic enzyme system that synthesizes the vitamin K-dependent factors. The resulting hypoprothrombinemic effect may enhance the action of warfarin and other oral anticoagulants.

ADVERSE REACTIONS: Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. If ringing in the ears, deafness, skin rash, or visual disturbances occur, the drug should be discontinued.

DOSAGE AND ADMINISTRATION:

1 tablet upon retiring. When necessary, 1 additional tablet may be taken following the evening meal.

Product Information as of September, 1977

U.S. Patent 2,985,558

Merrell

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

Direct Medical Inquiries to:
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.
Licensor of Merrell®



for Knotts in the night



QuinammTM

each tablet contains quinine sulfate 260 mg., aminophylline 195 mg.

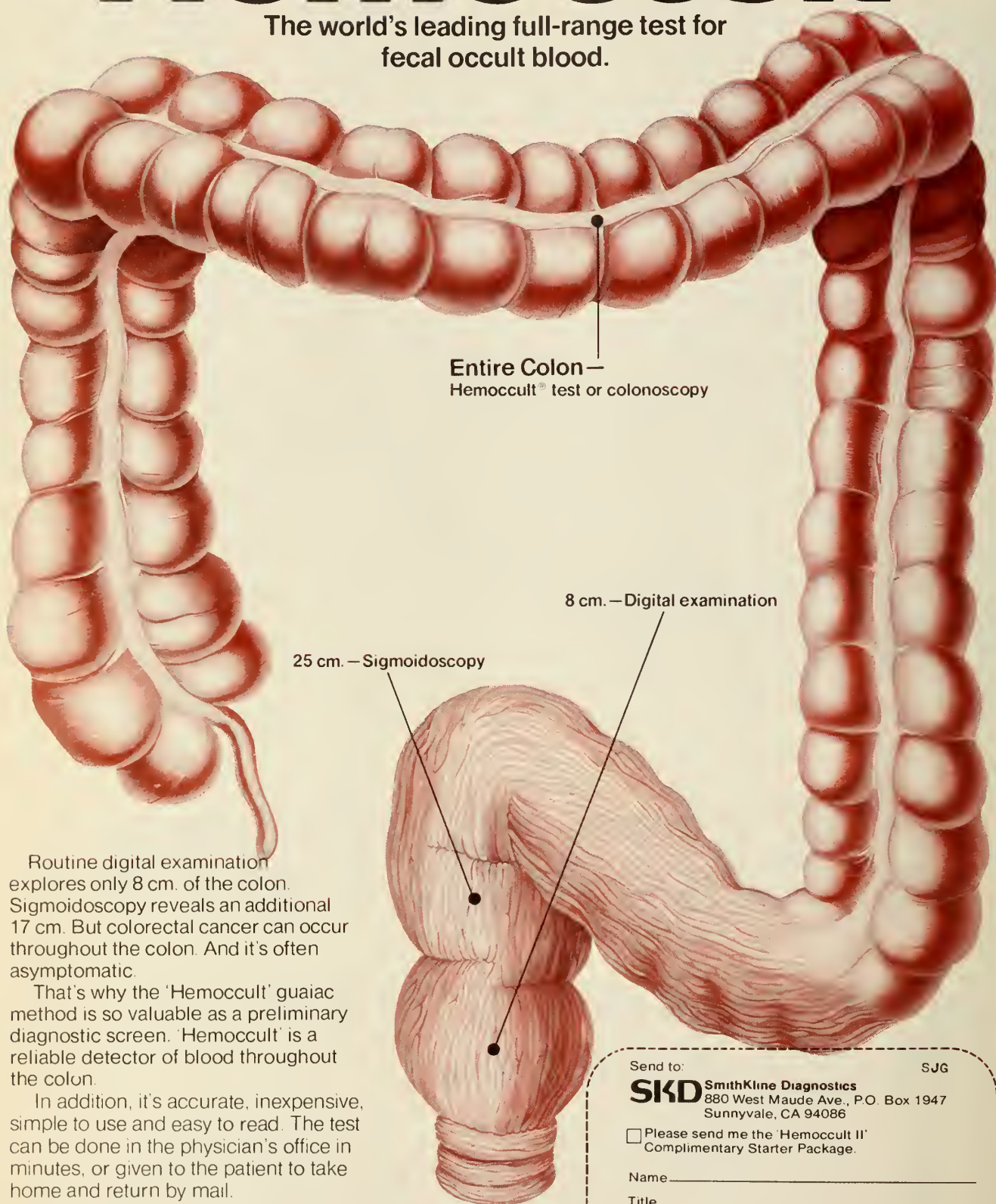
specific therapy for painful night leg cramps

Nocturnal recumbency leg muscle cramping is frequently an unwelcome bedfellow for many patients—especially those with arthritis, diabetes or peripheral vascular disease...consider Quinamm...simple, convenient dosage—usually just one tablet at bedtime...can provide restful, welcome sleep without night leg cramps.

See opposite page for prescribing information.

Hemoccult®

The world's leading full-range test for
fecal occult blood.



Routine digital examination explores only 8 cm. of the colon. Sigmoidoscopy reveals an additional 17 cm. But colorectal cancer can occur throughout the colon. And it's often asymptomatic.

That's why the 'Hemoccult' guaiac method is so valuable as a preliminary diagnostic screen. 'Hemoccult' is a reliable detector of blood throughout the colon.

In addition, it's accurate, inexpensive, simple to use and easy to read. The test can be done in the physician's office in minutes, or given to the patient to take home and return by mail.

More than 112,000 cases of colorectal cancer will occur in the United States this year. The earlier they are diagnosed, the greater the chances for successful treatment.

'Hemoccult' is available through local distributors, nationwide.

Send to:

SJG

SKD SmithKline Diagnostics
880 West Maude Ave., P.O. Box 1947
Sunnyvale, CA 94086

☐ Please send me the 'Hemoccult II'
Complimentary Starter Package.

Name _____

Title _____

Institution _____

Address _____

City _____ State _____ Zip _____

Phone _____

RESOURCE FOR PHYSICIANS IN TROUBLE

The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

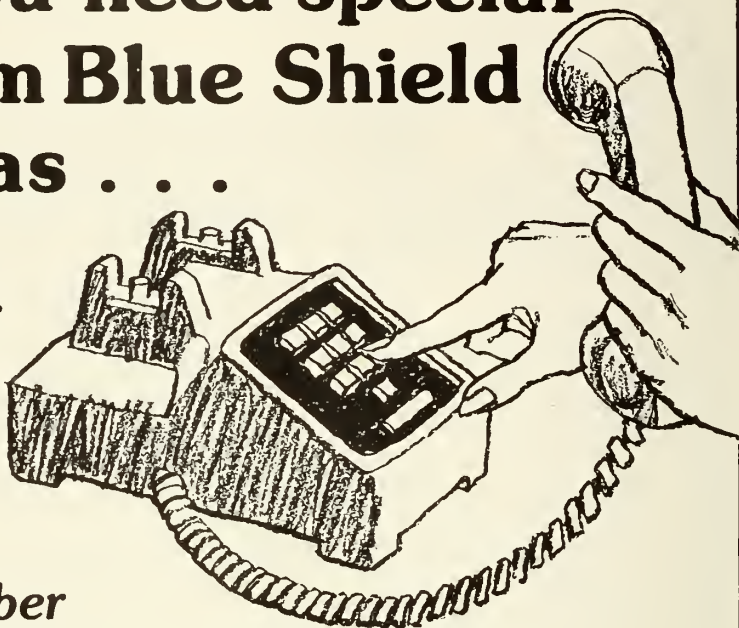
Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays (913) 625-7049
H. Ivor Jones, M.D., Shawnee Mission .. (913) 362-4040
Roy Neil, M.D., Hays (913) 628-3215
George M. Penn, M.D., Topeka (913) 234-9566
Ivan Rhodes, M.D., Wichita (316) 685-1291
Alex Scott, M.D., Junction City (913) 238-2518
Max Teare, M.D., Garden City (316) 276-7689
Virginia L. Tucker, M.D., Lawrence(913) 843-3750
Kermit Wedel, M.D., Minneapolis (913) 392-2144

Kansas Medical Society, Topeka (913) 235-2383/235-3619

When you need special help from Blue Shield of Kansas . . .

we're as close as your phone



Just use our Hot Line number 1-800-432-3587 for questions about:

- Blue Shield policies and claim procedures
- Claims problems not resolved by regular correspondence
- Government Program policies
- Professional Relations matters that need a staff member's help.

remember . . .

Calls on the "HOT LINE" cannot be transferred to a specific person because they do not come in on the regular Blue Shield switchboard. If you want to talk to a specific person, call through the regular number:

TOPEKA OFFICE - 1-913-232-1000
 WICHITA OFFICE - 1-316-686-7263
 DODGE CITY OFFICE - 1-316-225-0884

and ask for the person by name. However, you may call on the "HOT LINE" and leave a message for your assigned representative.

and don't forget . . .

When you need a visit to your office, you have a specially assigned Professional Relations Representative who is ready to help. Call for your Blue Shield representative by name or leave your rep a message.

TOPEKA OFFICE - 1-913-232-1000
 THE HOT LINE - 1-800-432-3587
 WICHITA OFFICE - 1-316-686-7263
 DODGE CITY OFFICE - 1-316-225-0884



Blue Shield
 of Kansas

1133 TOPEKA AVE.
 TOPEKA, KANSAS 66601

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

WELCH ALLYN WALL UNIT

The new 3.5v. Halogen wall transformer unit with Fiber Optic Pneumatic Otoscope and Ophthalmoscope, one of the complete line of WELCH ALLYN diagnostic equipment currently in stock for immediate delivery.

to arrange a demonstration in
your office contact your local
Goetze-Niemer salesman or call



The GOETZE-NIEMER Co.

1701 Brooklyn, K.C., MO. 816-231-1900
serving the Midwest since 1884

Your one source for complete clinical laboratory services.

The Lattimore-Fink Laboratories offers physicians, hospitals and institutions a single source for over 500 routine and esoteric tests performed with the latest methodologies. The laboratory is directed by full-time pathologists; certified by C.A.P. and C.D.C.; and is licensed by Medicare and Medicaid.

Client services include fast turnaround time, consolidated results reports and free collection and submission supplies. Laboratory services are offered to clients throughout Kansas, with pickup service available in most areas.

Lattimore-Fink has offered continuous pathology services for over a half century, and is committed to excellence in laboratory medicine.

TEST	RESULT	REFERENCE RANGE
HEMOGLOBIN	14.5	12.0 - 16.0
HEMATOCRIT	42.0	37.0 - 47.0
RBC COUNT	4.5	4.0 - 5.0
WBC COUNT	10.0	4.0 - 10.0
PLATELET COUNT	250,000	150,000 - 400,000
GLUCOSE	100	70 - 100
BUN	12	8 - 20
CREATININE	1.0	0.6 - 1.2
ALT	25	0 - 40
AST	30	0 - 40
ALP	100	40 - 120
GGT	15	0 - 40
BILIRUBIN	1.2	0.0 - 1.2
TOTAL PROTEIN	7.5	6.5 - 8.5
ALBUMIN	4.5	3.5 - 5.5
A/G RATIO	1.7	1.0 - 2.0
SG	1.020	1.010 - 1.030
PH	7.0	7.35 - 7.45
GLUCOSE	NEG	NEG
PROTEIN	NEG	NEG
KETONES	NEG	NEG
BILIRUBIN	NEG	NEG
UROBILINOGEN	NEG	NEG
NITRITE	NEG	NEG
LEUKOCYTES	0	0 - 10
RBCS	0	0 - 10

For a complimentary copy of our Test Directory and Service Directory, please contact the laboratory.

 **THE LATTIMORE-FINK
LABORATORIES, INC.**
A DAMON LABORATORY

115 W. Crane, Topeka, KS 66603
Phone: 913-234-8621

★ *Specialized Service*

IN
PROFESSIONAL LIABILITY INSURANCE

is a high mark of distinction

Since 1899

1912

MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

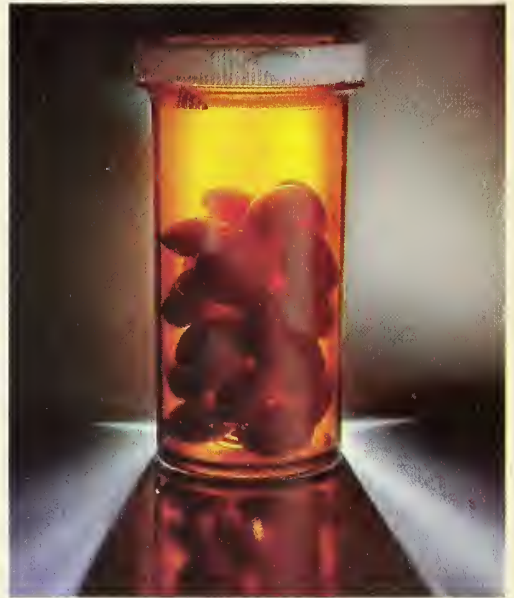
Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222

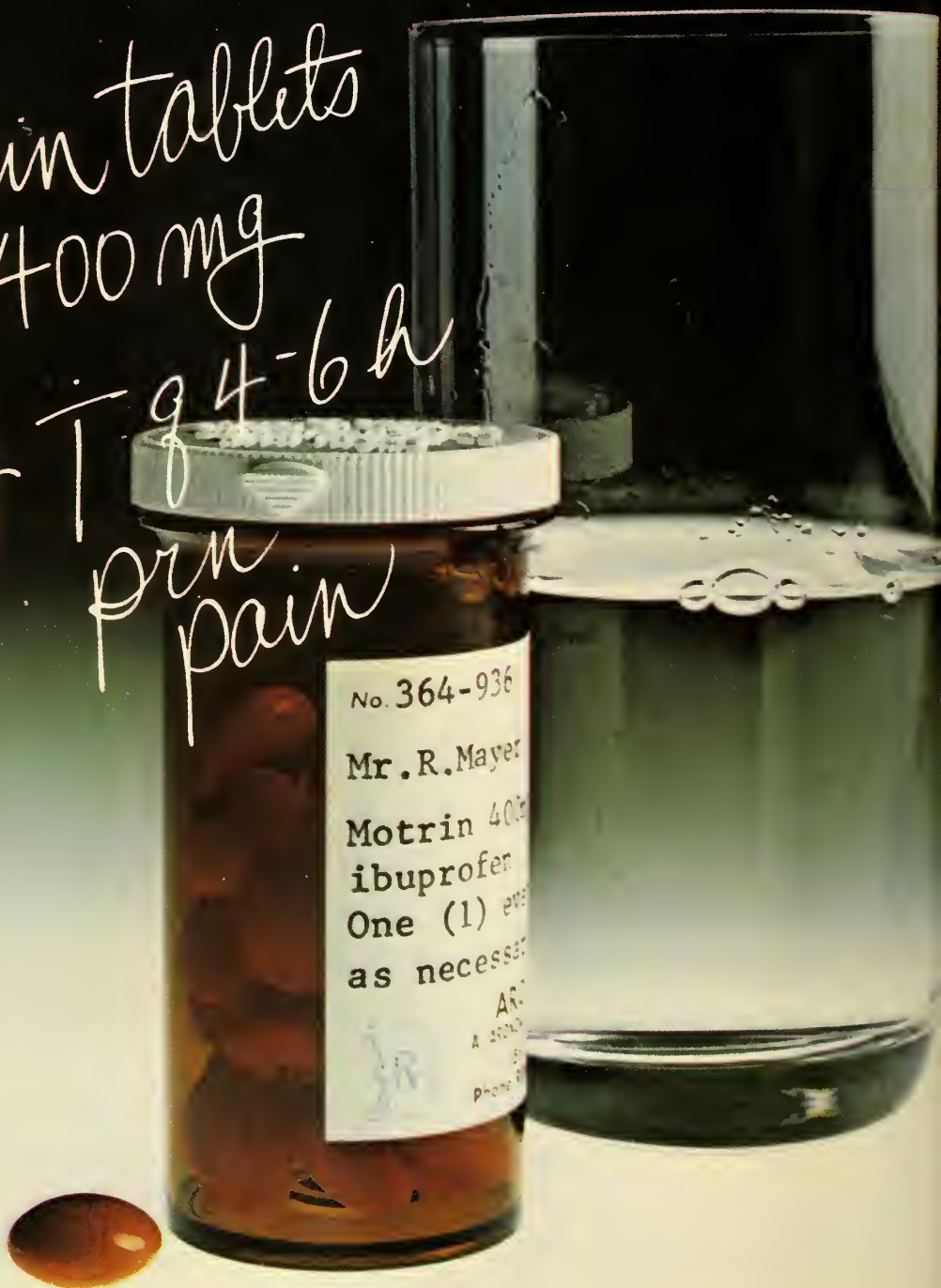
The Upjohn Company
announces
a new
indication for
Motrin[®]
(ibuprofen)



A well-tolerated, nonnarcotic prescription for pain

Motrin tablets
400 mg

Sig T q 4-6 h
prn
pain



Motrin now proved an effective analgesic for mild to moderate pain

Motrin 400 mg provided greater relief of pain than did propoxyphene 65 mg in controlled clinical pain studies.

Time after drug administration (hour)		.5	1	2	3	4
Mean relief-of-pain scores* (No. patients reporting)	Motrin 400 mg ibuprofen	.89 (108)	1.25 (108)	1.36 (108)	1.28 (107)	1.19 (106)
	Darvon 65 mg propoxyphene	.66 (100)	.99 (99)	1.13 (96)	.99 (96)	.80 (96)
Statistical significance		p<0.02	p<0.01	p<0.05	p<0.02	p<0.002

*0 = No relief 1 = Partial relief 2 = Complete relief

Data on file at The Upjohn Company

Motrin demonstrated statistically significant greater relief of pain than did Darvon at all time intervals.

Motrin 400^{TABLETS}mg
ibuprofen, Upjohn

- Not a narcotic • Not addictive • Not habit forming
- Rapid analgesic action • Indicated in acute and chronic pain
- Well tolerated. The most common side effect with Motrin is mild gastrointestinal disturbance.

Please turn the page for a brief summary of prescribing information.

Upjohn

Motrin[®] (ibuprofen) now proved an effective analgesic for mild to moderate pain

Motrin[®] Tablets (ibuprofen, Upjohn)

Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. Aspirin: used concomitantly may decrease Motrin blood levels.

Coumarin: Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness,* headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid and osteoarthritis, including flares of chronic disease. Suggested dosage is 300, 400 or 600 mg t.i.d. or q.i.d.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

Do not exceed 2400 mg per day.

Caution: Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

ALDORIL[®]
containing methylidopa and hydrochlorothiazide

TABLETS

ALDORIL[®] -25

containing 250 mg ALDOMET[®] (Methylidopa, MSD) and 25 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL[®] -15

containing 250 mg ALDOMET[®] (Methylidopa, MSD) and 15 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL[®] D30

containing 500 mg ALDOMET[®] (Methylidopa, MSD) and 30 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL[®] D50

containing 500 mg ALDOMET[®] (Methylidopa, MSD) and 50 mg HydroDIURIL[®] (Hydrochlorothiazide, MSD)

MSD
MERCK
SHARP
DOHME
J9AR13

Merck Sharp & Dohme, Division of
Merck & Co., Inc., West Point, PA 19486

Copyright © 1979 by Merck & Co., Inc.

Upjohn THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

MED B-4-S

Ka M P A C

KANSAS MEDICAL POLITICAL ACTION COMMITTEE

1300 TOPEKA AVE.

•

TOPEKA, KANSAS 66612

Dear Doctor:

For medicine, the political winds are beginning to gust; gone is the recent relative calm; and yet to come are the potentially destructive gales. The time to prepare is NOW.

The political powers behind the storm expect the medical profession to be an ideal scapegoat for governmental ills, giving only token resistance and crumbling easily under the constant pressure for socialization and the philosophy of more government is better government.

I believe the medical profession can survive intact and may very well be even stronger if action is taken now. Your help is needed in two ways.

First, on a regular basis, express your views on medical issues to your national legislators. Senators Bob Dole and Nancy Kassebaum can be addressed at

U.S. Senate Building
Washington, DC 20510

and your congressman

District 1 Larry Winn
District 2 Keith Sebelius
District 3 Jim Jeffries
District 4 Dan Glickman
District 5 Robert Whittaker

may be contacted at

U.S. House of Representatives
Washington, DC 20515

If you do not have a pet issue, the *AMA News* will have a topic that will catch your interest. Regular communication on specific issues will not be ignored.

A second and also very important effort you can make is a generous donation to KaMPAC. KaMPAC has been effective, but for it to play an important role in responding to the incredible political pressures to be put on medicine, your strong support is needed. The time is NOW; there will be no second chance.

Sincerely,

Ronald Davis, M.D.
Chairman

21st AMA NATIONAL CONFERENCE ON THE MEDICAL ASPECTS OF SPORTS

SAN ANTONIO CONVENTION CENTER

San Antonio, Texas
January 12, 1980

Approved for Category I Credit toward AMA Physician's Recognition Award for Continuing Medical Education, and 7 (seven) elective hours, American Academy of Family Physicians.

For information, contact Jack A. Bell, American Medical Ass'n, 535 Dearborn Street, Chicago, IL 60610.

The advertising in THE JOURNAL

keeps you informed
and helps pay the
publishing costs!

When the local
representative calls,
tell him you saw
his company's ad in
your journal.

Brief Summary of Prescribing Information

Indications and Usage: Symptomatic relief of anxiety, tension, agitation, irritability, insomnia associated with anxiety neuroses and transient situational disturbances, an associated with depressive symptoms and as a treatment of symptoms of anxiety if such symptoms are a significant feature of functional or organic disorders, particularly gastrointestinal and cardiovascular.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all acting drugs, warn patients on lorazepam not to operate machinery or motor vehicles, and diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). A prone individuals, e.g., drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid sedation.

Terminate dosage gradually since abrupt withdrawal of any anti-anxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions.

Observe usual precautions with impaired renal or hepatic function.

Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular conditions.

Esophageal dilation occurred in rats treated with lorazepam for more than 1 year (6mg/kg/day). No effect dose was 1.25mg/kg/day (approximately 6 times the maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for long periods and in geriatric patients requires caution and frequent monitoring for symptoms of upper GI disease.

Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia, some have elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressive effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastrocnemius malformation and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chloridiazepoxide, diazepam, meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during pregnancy should almost always be avoided. Possibility that a woman of child-bearing potential may become pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug.

In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.2%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, sea change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, function disturbance, various gastrointestinal symptoms and autonomic manifestations. Sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Overdosage: In management of overdosage with any drug, bear in mind that multiple drugs may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring of vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

Ativan[®]
for (lorazepam)
Anxiety

Dosage: Individualize for maximum beneficial effects. Increase gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

How Supplied: 0.5, 1.0 and 2.0mg tablets.

Wyeth Laboratories
Philadelphia, PA 19101



Why one benzodiazepine and not another?

Are you concerned about long-acting metabolites? Many clinicians, as well as pharmacologists, are beginning to draw attention to this problem (see New England Journal of Medicine, April 5, 1979).

In contrast to some older benzodiazepines, Ativan (lorazepam) does not give rise to long-lasting active metabolites. As with all benzodiazepines, you should follow the usual precautions concerning co-administration with other CNS depressants and warn your patients against operating dangerous machinery and motor vehicles.

However, it is noteworthy that Ativan showed no clinical evidence of accumulation even when given in high doses over periods up to 6 months. The half-life of free lorazepam is about 12 hours; steady-state serum levels are attained in 2-3 days. Comparable data for diazepam: 20-50 hours and at least 7-10 days. (The pharmacokinetic profile of a drug can define such characteristics as absorption, distribution, metabolism and elimination but cannot, at present, be directly related to its therapeutic effectiveness.)

Ativan has a convenient b.i.d. or t.i.d. dosage schedule; it is compatible with a long list of other medications and, of course, it is a highly effective anxiolytic agent, as established in numerous nationwide, double-blind, controlled evaluations in thousands of patients.



See important information on preceding page.

Ativan[®]
for (lorazepam)
Anxiety

Tax bite really hurting?



Consult a CPA... while there's still time to ease the pain!

Right now, *before the year ends*, call in a true professional for tax planning. Call in a CPA. Chances are, your '79 tax could be reduced through a CPA's special tax knowledge.

CPA: Certified Public Accountant — a professional whose competency has been proved through completion of rigid educational and experience standards.

Now is a good time to get acquainted with a CPA. First, for help in planning economies to cut your taxes. Later, for preparing your tax returns in an accurate and dependable manner.

CPAs. The initials tell you their *credentials*. The Yellow Pages tell you their *names*.



**Kansas Society of
Certified Public Accountants**



Paget's Disease

Intense Calvarial Localization of Gallium-67

NORMAN L. MARTIN, M.D.; RALPH G. ROBINSON, M.D.; and
DAVID F. PRESTON, M.D., *Kansas City, Kansas*

SIR JAMES PAGET first described osteitis deformans at a meeting of the Royal Medico-Chirurgical Society in 1876.¹ Paget's disease has now been studied extensively for more than 100 years, yet its exact cause remains unknown. Recent studies in several nuclear medicine laboratories have contributed to a better understanding of Paget's disease.² Reports have appeared on the kinetics of bone scanning agents,³ radioactive calcium and strontium metabolism,⁴ dynamic blood flow studies,⁵ response to therapy,^{6, 7} and the importance of possible pitfalls in diagnosis using radionuclides in clinical studies of patients with Paget's disease of bone.⁸⁻¹⁵ The case reported below demonstrates markedly increased uptake of gallium-67 in the skull of a patient with Paget's disease, and illustrates the importance of comparing the gallium-67 scan with routine radiographs, especially when gallium scanning has been performed in a patient suspected of having an occult infectious process.

Case Report

A 71-year-old black female was admitted from the emergency room with the chief complaint of crampy abdominal pain, nausea, and vomiting of four days'

Intense localization of 67-Ga-citrate is seen in Pagetoid bone in the skull. Co-existent disease in the brain, osseous structure, or soft tissues that also accumulate 67-Ga-citrate may therefore be obscured or partially masked, thus leading to a delayed, inappropriate, or missed diagnosis. A case illustrating intense accumulation of 67-Ga-citrate in the calvarium of a patient with known Paget's disease of the skull is presented. The diagnostic problems this presented and possible solutions are discussed.

duration. She had a previous history of Paget's disease, myocardial infarction, pulmonary embolism, and atrial fibrillation. The review of systems, except for her admitting complaints, was negative except for shortness of breath. Specific questioning regarding symptoms referable to the central nervous system elicited negative response.

Physical examination revealed atrial fibrillation, tenderness in the left-lower quadrant with guarding, questionable rebound, and anterior rectal tenderness on palpation. Results of the neurological examination were normal. Admission laboratory values included an elevated alkaline phosphatase of 14 BLU/L and a WBC of 9,700 with a normal differential.

From the Department of Diagnostic Radiology, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Martin, UKSM-KC, 39th and Rainbow Blvd., Kansas City, KS 66103.

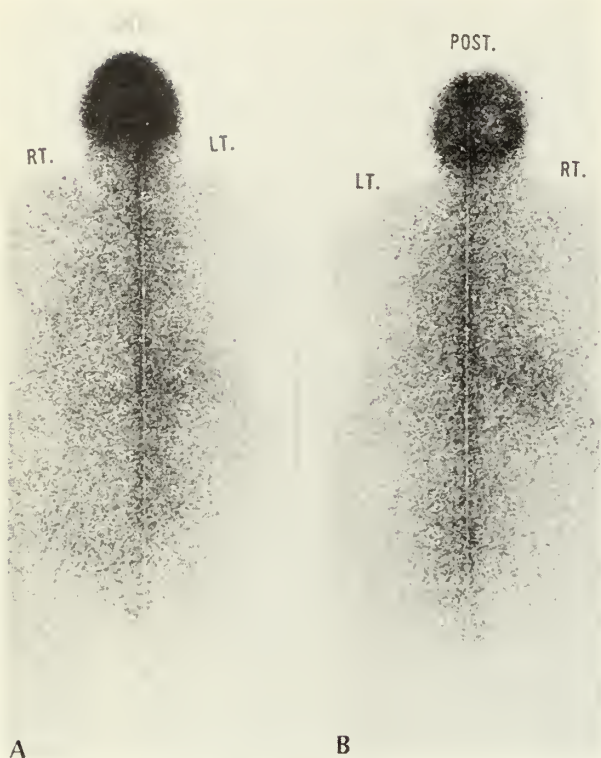


Figure 1. Whole body images at 24 hours. Markedly increased uptake of gallium-67 throughout the calvarium.

The patient was observed for several days. Her clinical course deteriorated, and an exploratory laparotomy was performed. A ruptured appendix with periappendiceal abscess and generalized peritonitis was found. The appendix was removed, the abscess drained, and antibiotic therapy begun. Following surgery, the patient developed pseudomonas and serratia marcescens pneumonia and sepsis. Diminished renal function required hemodialysis. Because of continuing ileus, sepsis and a tender abdomen, recurrence of an abdominal abscess was suspected. A gallium-67 whole body scan was ordered approximately four weeks after the initial surgery to assist in the diagnostic evaluation for possible abscess. The scan was performed using a series 100 Ohio-Nuclear scintillation camera with whole body scanning table. A scan was obtained 24 hours following the injection of 7 mCi of (^{67}Ga) citrate (Figure 1). Additional views of the head were obtained 48 hours after injection (Figure 2).

The scan of the whole body and localized images of the skull show intense uptake of gallium-67 in the skull. There were no abnormal accumulations in the abdomen. The differential diagnosis included in-

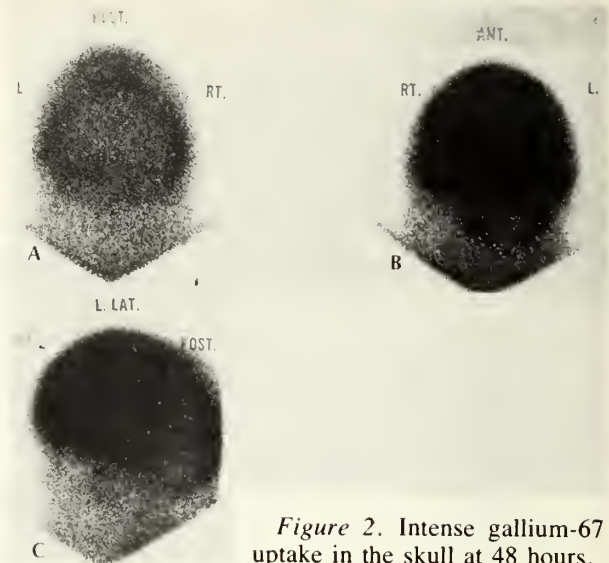


Figure 2. Intense gallium-67 uptake in the skull at 48 hours.

tracranial disease such as infection, tumor or subdural hematoma, or extracranial disease such as Paget's disease, fibrous dysplasia, osteomyelitis, or tumor.⁶⁻²⁰ With a history of known Paget's disease, plain radiographs of the skull were obtained (Figure 3). Despite the negative gallium abscess scan, the patient's clinical course and a suspicious ultrasound examination led the surgeons to re-explore the abdomen. No evidence of abdominal abscess was found. After another three weeks of antibiotic therapy, the patient was discharged from the hospital in satisfactory condition.

Discussion

Uptake of gallium in osteogenic tissue was first noted in 1949.²⁰ Increased gallium-67 accumulation on Pagetoid bone has been reported previously,² but in our case the gallium-67 uptake was localized to the skull. This case reiterates the importance of com-

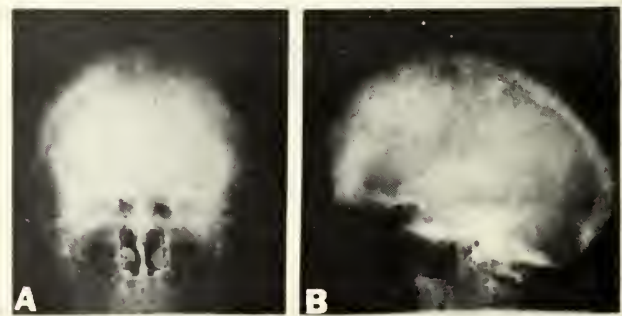


Figure 3. Frontal and lateral views of the skull showing extensive Paget's disease.

paring the radionuclide image with the plain radiograph of the skull to corroborate that increased accumulation of gallium-67 is due to Paget's disease, and not secondary to other CNS disease states that will accumulate gallium-67. Intracranial disease processes — including infection, tumor, subdural hematoma — and diseases of the calvarium — such as fibrous dysplasia, osteomyelitis, tumor, and trauma — may also accumulate gallium-67, and may be masked by the markedly accentuated uptake of gallium-67 in Paget's disease of the skull.

The radiographic skull film findings and awareness of the differential diagnostic possibilities that may cause increased gallium-67 accumulation in the brain or skull should lead the nuclear physician to carefully consider the physical findings, laboratory values, and clinical course to establish Paget's disease as the cause of increased gallium-67 accumulation in the skull. Computerized tomography, angiography, radionuclide brain or bone imaging, and biopsy may be required to confirm the presence of concomitant disease existing in or near Pagetoid bone.

References

1. Paget, J.: On a form of chronic inflammation of bones (osteitis deformans). *Med. Chir. Trans.* 60:37, 1877.
2. Serafini, A. N.: Paget's disease of bone. *Semin. Nucl. Med.* 6:47-57, 1976.
3. Rosenthal, L. and Kaye, M.: Technetium-99m pyrophosphate kinetics and imaging in metabolic bone disease. *J. Nucl. Med.* 16:33-39, 1975.
4. Bauer, C. H. G. and Wendelberg, B.: External counting of Ca-47 and Sr-85 in studies of localized skeletal lesions in man. *J. Bone Joint Surg.* 41:B 558-580, 1959.
5. Fitzer, P. M.: Nuclide angiography in Paget's disease of the skull: Case report. *J. Nucl. Med.* 16:619-622, 1975.
6. Goldman, A. B. et al.: Radionuclide uptake studies of bone: A quantitative method of evaluating the response of patients with Paget's disease on diphosphonate therapy. *Radiology* 117:365-369, 1975.
7. Waxman, A. D.; Siemsen, J. K. and Singer, F.: Gallium scanning in Paget's disease of bone: A superior parameter in following the response to calcitonin therapy. *J. Nucl. Med.* 621-622, 1977.
8. Preimesberger, K. F.; Loven, M. K. and Shafer, R. B.: Abnormal brain scan in Paget's disease of bone — confusion with subdural hematoma. *J. Nucl. Med.* 15:880-883, 1974.
9. Kieffer, S. A. and Loken, M. K.: Positive brain scans in fibrous dysplasia and other lesions of the skull. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 106:731-738, 1969.
10. Khairi, M. R. A.; Wellman, H. N. and Robb, J. A.: Paget's disease of bone (osteitis deformans) symptomatic lesions and bone scan. *Ann. Intern. Med.* 79:348-352, 1973.
11. Bowerman, J. W.; Altman, J. and Hughes, J. L.: Pseudo-malignant lesions in Paget's disease of bone. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 124:57-61, 1975.
12. Burgener, F. A. and Perry, P. E.: Solitary renal cell carcinoma metastasis in Paget's disease simulating sarcomatous degeneration. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 128:853-855, 1977.
13. Fitzer, P. M.: Radionuclide angiography — brain and bone imaging in craniofacial fibrous dysplasia: Case report. *J. Nucl. Med.* 18:709-712, 1977.
14. Lisbona, R. and Rosenthal, L.: Observations on the sequential use of Tc-99 phosphate complex and Ga-67 imaging in osteomyelitis, cellulitis and septic arthritis. *Radiology* 123:123-129, 1977.
15. Hofstetter, K. R.; Patton, D. D. and Henry, R. E.: Cerebral perfusion deficit masked by Paget's disease of the skull. *J. Nucl. Med.* 19:197-199, 1978.
16. Jones, A. E. and Koslow, M.: Scintigraphic detection of intracranial tumors with Ga-67 citrate. *J. Nucl. Med.* 13:439-440, 1972.
17. Nelson, B. and Hayes, R. L.: Distribution of gallium in human tissues after intravenous administration. *J. Nucl. Med.* 13:92-100, 1972.
18. Waxman, A. D.; Lee, G. and Wolfstein, R.: Differential diagnosis of brain lesions by gallium scanning. *J. Nucl. Med.* 14:903-906, 1973.
19. Waxman, A. D. and Siemsen, J.: Gallium scanning in cerebral and cranial infections. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 127:309-314, 1976.
20. Hayes, R. L.: The medical use of gallium radionuclides: A brief history with some comments. *Semin. Nucl. Med.* 8:183-203, 1978.

Practice in Living

At the request of the Impaired Physicians Committee of the Kansas Medical Society, space has been made available in the *Journal* for a section featuring articles relating to concerns and problems unique to the lifestyle of the physician. Articles may focus on communication, stress and distress, responsibilities to self, medical marriage, recreation and leisure, and related topics. Manuscripts or suggested topics and questions are solicited and should be submitted to:

Editor

**The Journal of the Kansas
Medical Society
1300 Topeka Avenue
Topeka, KS 66612**

Slow-Virus Diseases

A Concise Review

ABBAS M. BEHBEHANI, Ph.D.,* *Kansas City, Kansas*

VIRAL DISEASES are generally acute and self-limiting; normally the incubation period ranges from a few days to about two weeks, and after a comparatively short clinical course, the causative virus is eliminated from the host tissues. However, there are a few viral diseases — *e.g.* rabies and hepatitis B — that have long (up to several months) incubation periods, and others — such as congenital rubella and cytomegalic inclusion disease — in which the infectious agents persist for long periods (months or years) in the hosts. By and large, however, a progressive tissue destruction, observed in a number of nonviral diseases — *e.g.* lymphogranuloma venereum, tuberculosis, histoplasmosis, and schistosomiasis — is absent in most viral diseases.

Recently, however, a number of studies have shed considerable light on the so-called slow-virus diseases which may be designated as atypical viral diseases. These diseases could be classified into two categories on the basis of cause, pathogenesis and host response, namely:

1. Diseases caused by unconventional viruses, *e.g.* scrapie of sheep and Kuru and Creutzfeldt-Jakob disease of man. The agents of these diseases are designated as unconventional viruses because, unlike conventional viruses, they are resistant to heat (80°C), formaldehyde, proteases, nucleases, ultraviolet light, and x-rays. They are, however, inactivated by autoclaving, phenol (90%), ether, acetone, and hypochlorite (Clorox, 0.5 to 5.0%). Furthermore, these agents are invisible as recognizable viruses by electron microscopy. They may, however, represent mammalian viroids. (Viroids are a number of naked — without the protein coat or capsid — RNA viruses that cause a variety of diseases in plants, *e.g.* potato spindle tuber.¹)

2. Diseases ostensibly caused by conventional viruses but with atypical (or unconventional) pathogeneses. These are exemplified by subacute sclerosing panencephalitis (associated with a

A number of central nervous system diseases of man are associated with unconventional viruses or have atypical pathogeneses. These are called slow-virus diseases and are exemplified by Creutzfeldt-Jakob disease and subacute sclerosing panencephalitis. Recent findings on the causes, epidemiologies, pathogeneses, and pathologies of five of these human infections are reviewed.

measles-like virus) and progressive multifocal leukoencephalopathy (associated with certain papovaviruses).

The common features of the diseases in both categories are long incubation period (months to years) and a protracted progressive course that inexorably ends in death. Pathologically, Kuru and Creutzfeldt-Jakob disease of man (as well as scrapie of sheep and transmissible encephalopathy of mink) are designated as subacute spongiform encephalopathies. In these diseases, the basic lesion consists of a progressive vacuolation in the dendritic and axonal processes and cell bodies of neurons and, to a lesser extent, in astrocytes and oligodendrocytes. An extensive astroglial hypertrophy and proliferation and finally status spongiosus of the gray matter are regularly observed. Moreover, there is no virus-associated inflammatory response in the brain, no phagocytosis, no marked rise in CSF protein, and no evidence of an immune response by the host to the causative agent (either humoral or cellular). On the other hand, diseases of the second category — namely, subacute sclerosing panencephalitis and progressive multifocal leukoencephalopathy — are characterized by the demyelination of the CNS. Moreover, perivascular infiltration with mononuclear cells is regularly observed in the first disease, while in the second this infiltration is usually mild and focal and only rarely pronounced. Prominent proliferation of glial cells and intranuclear inclusions in glial cells are observed in both diseases. Bizarre giant astrocytes are typically seen in pro-

* Professor of Pathology, Department of Pathology and Oncology, University of Kansas School of Medicine, Kansas City, Kansas.

gressive multifocal leukoencephalopathy.² The main human slow-virus diseases are described below.

Kuru

This is the classical slow-virus infection of man first investigated by Gajdusek and Zigas in 1957 among the Fore tribes of the eastern highlands of New Guinea. The women and children of these tribes practiced (until the early 1960s) ritual cannibalism as a rite of mourning and respect for dead kinsmen. Kuru (which means shivering in the Fore language) has an insidious onset and is characterized by cerebellar ataxia and tremor that progress through the stages of ambulatory, sedentary, and terminal phases to complete motor incapacity and death within one year. The incubation period ranges from four to twenty years. The disease was apparently transmitted through oral, conjunctival, nasal, and broken skin routes by highly infectious brain tissues of dead Kuru victims who were dismembered and subsequently consumed during the mortuary practices. Since the cessation of cannibalism, the incidence of Kuru has been decreasing; currently the disease is no longer seen in children and adolescents. Moreover, while there were about 200 Kuru deaths in 1957, the dead numbered about 35 in 1975 (in a total population of about 35,000).

The clinical and pathological features (see above) of this disease bear a striking resemblance to those of scrapie. As described above, no viral agent and no cellular or humoral response in the diseased individuals have been demonstrated. However, the disease has been transmitted experimentally to apes (chimpanzees and gibbons), New World monkeys (capuchins, marmosets), Old World monkeys (baboons, cynomolgus, rhesus) and recently to minks and ferrets by the intracerebral inoculation with brain tissue of Kuru patients. Aside from the brain, the infectious agent has also been rarely found in the liver and spleen of victims. The incubation period in the experimental animals varies from several months to years.³

Creutzfeldt-Jakob (C-J) Disease

This is a rare presenile dementia found worldwide sporadically in a familial pattern of inheritance. Clinically, after a period of vague prodromal symptoms, progressive dementia appears accompanied by signs of myoclonus, paresis, cerebral ataxia, and seizures terminating usually within two years in coma and death. Moreover, in most patients, paroxysmal bursts of high voltage slow waves on electroencephalography are observed.

In its pathological features (a spongiform en-

cephalopathy) — absence of a detectable causative agent and lack of cellular and humoral host response — this disease is similar to Kuru and scrapie (see above). C-J disease has also been transmitted to chimpanzees, New and Old World monkeys and to domestic cats, hamsters, and guinea pigs; the incubation periods in these animals range from several months to years.

The first transmission of this disease from man to man was reported in 1974; a 55-year-old man developed C-J disease 18 months after receiving a corneal transplant from a donor who had died of this disease. More recently there have been reports of one more case due to corneal transplantation and two cases (one a 17-year-old boy and the other a 23-year-old woman) who developed the disease 27-30 mos after stereotactic electroencephalographic exploration with the use of silver electrodes (sterilized with 70% alcohol and formaldehyde vapor) that had been previously implanted in a C-J disease patient. In this connection, it should be noted that a C-J victim brain kept in 10% formol saline at room temperature for seven months remained infectious and transmitted the disease to a chimpanzee by intracerebral inoculation.⁴

The rate of this disease in the world is 1-2 cases/million (about 200 deaths/yr in United States). However, the rate among Libyan Jews is more than 30 times higher with significant clustering within families. This higher rate has been attributed (on circumstantial evidence) to the regular consumption of cattle and sheep brains and eyeballs by these people; another factor or co-factor may be a genetic influence on susceptibility to the causative agent.⁵ A recent study in England indicated a tenuous association of this disease with the keeping of ferrets.⁶ Although the infectivity of the buffy coat of blood from infected guinea pigs (presence of viremia) was demonstrated, no maternal transmission could be detected.⁷

Subacute Sclerosing Panencephalitis (SSPE)

This is a fatal disease of children and young adults with an estimated incidence of about one/million. Clinically, the disease has an insidious onset with a progressive mental and physical deterioration lasting usually three months to two years (sometimes up to six years with remissions). The patient remains afebrile but becomes delirious and ultimately demented with myoclonic jerks, seizures, and signs of decortication and decerebration. The pathological features of this disease are described above. J. R. Dawson observed inclusion bodies in the neurons of SSPE patients in 1933 and proposed a viral causative

agent. However, no virus could be isolated by conventional methods from the brains of the victims. Recently a measles-like virus has been isolated by co-cultivating affected brain tissue and lymph nodes with certain human (HeLa) and simian (BSC-1) cell cultures. Moreover, viral structures (measles-like virions and nucleocapsids) and measles virus antigen have been detected in SSPE brains by electron microscopy and fluorescent antibody techniques respectively. In addition, SSPE patients have increased titers of measles antibodies in their sera and CSF. The virus isolated from the brain of a SSPE case caused an SSPE-like disease in rhesus monkeys by intracerebral inoculation.⁸ Similarly isolated viruses produced encephalitis in ferrets and hamsters. The above findings strongly suggest that a defective variant of measles virus or a measles-like virus is involved in the development of SSPE. One study revealed that SSPE followed childhood measles after about seven years at the rate of 5-10 cases/million, while in children vaccinated with the live vaccine, the rate was 0.5-1.1 cases/million and SSPE occurred after about 3.3 years. It has been suggested that a tolerant infection with a latent virus develops after childhood measles and that the subsequent occurrence of SSPE is due to the defective immunity in the patient which may be congenital or measles-induced. The involvement of an environmental factor of zoonotic genesis — namely, sheep-rearing — was recently suggested. Reporting an outbreak of SSPE in Sardinia, the investigators point out that Sardinians have sheep-rearing in common with resident populations of other parts of the world (*e.g.*, North Island of New Zealand, Cape Province of South Africa, Iran, Lebanon, and Syria) where outbreaks of this disease have been recorded.⁹ The antiviral agent ribavirin was recently shown to inhibit the replication of three SSPE measles-like virus isolates when grown in Vero (continuous monkey kidney) cell cultures.¹⁰

Progressive Multifocal Leukoencephalopathy (PML)

This is a rare subacute progressive demyelinating disease of the CNS of adults first described by K. E. Astrom and his associates in 1958. More than 110 cases have been reported; excepting rare remissions and a few patients who survived for 3, 5, 10 and even 19 years, most have died within four to six months. The disease is generally associated with certain underlying diseases, *e.g.* Hodgkin's disease, chronic lymphatic leukemia, lymphosarcoma, sarcomatosis, tuberculosis, and with the administration

of immunosuppressive agents (as for renal transplantation). The disease starts insidiously and the dominant neurologic symptoms are cerebral; motor disturbances and mental changes are frequently observed. It progresses inexorably through gross hemispheric neurologic deficits such as hemiplegia or hemianopsia until death. The pathological features of this disease are described above.

A number of human polyomaviruses (members of papovaviridae family) have been isolated from the brains of PML cases; all of these viruses are related to SV40 virus (a simian polyomavirus). The first — designated JC virus — was isolated in 1970 (in primary human fetal glial cell cultures) from the brain of a 38-year-old man (JC) who had Hodgkin's disease for eight years before developing PML. Subsequently other human polyomaviruses designated JC or SV40-PML viruses were isolated from other PML cases. Aside from these, another human polyomavirus — designated BK virus — was isolated in 1970 (in monkey kidney cell cultures) from the urine of an immunosuppressed 39-year-old man (BK) who had received a kidney transplant from his brother. This virus has been linked with ureteric stenosis in kidney transplant patients and with respiratory tract infections following primary infection. Although the above human polyomaviruses are related to SV40, they are nonetheless, antigenically distinct from the simian virus and also differ antigenically from one another. Moreover, the oncogenicity of JC and other JC-like viruses for newborn hamsters is much higher than that of BK virus; two of four adult owl monkeys inoculated with JC virus developed brain tumors at 16 and 25 months post inoculation respectively and polyomavirus T antigen was detected in both the tumor cells and in the cultured cells derived from the tumors.¹¹ More recently, JC virus extracted directly from the brain of a 56-year-old man with PML and JC virus was detected by *in situ* hybridization with complementary RNA in oligodendrocytes, astrocytes, and possible vascular endothelial cells in the same brain.¹²

These viruses are generally oncogenic for experimental animals and fail to produce PML or a PML-like disease in these hosts. Various sero-epidemiologic studies have indicated that human infection with these viruses is wide-spread; about 70 per cent of adults have significant level of antibodies against JC virus. Although these polyomaviruses have been frequently isolated from PML cases, their causative role in this disease has not yet been elucidated. It is believed that a latent virus remaining in

the host from the initial infection is subsequently induced to produce PML by a defect in the host's immune mechanism due to an underlying disease. A recent report showed that systemic administration of adenine arabinoside did not alter the clinical course significantly in two advanced cases of PML.¹³

Multiple Sclerosis (MS)

Multiple sclerosis has been considered as a slow-virus disease by several investigators. The disease is one of the most common slow infections of the CNS in North America and Europe; some 500,000 individuals aged 20 to 40 years (peak incidence at age 30), are afflicted with this disease in the United States. The prevalence of the disease, however, increases with increasing latitude both north and south of the equator (3 times more in Halifax as compared to New Orleans and 37 times more in Minnesota as compared to Mexico City). The onset is rather sudden and the clinical course is highly variable. The symptoms may be visual disturbance, ataxia, weakness or paresthesias of a limb, and slurred speech. Symptoms of the initial attack last from a few days to several weeks and there may be an interval of months to years of remission before a relapse occurs, which may be accompanied by the original symptom or by an entirely different one. The disease, however, is generally progressive and each unpredictable subsequent attack causes further disability in the victim. This relapsing characteristic and the varied symptomatology are typical of this neurological disorder. Occasionally, remission appears to be permanent.

The pathological features of MS consist of sharply circumscribed plaques of demyelination scattered throughout the white and gray matter of the CNS and perivascular infiltration with lymphocytes and plasma cells, followed by a reactive gliosis especially around the perimeters of the plaques. The widely spread demyelinating lesions are responsible for the varied symptomatology in MS patients.

The involvement of measles virus in the development of MS was first suggested in 1962 by J. M. Adams and D. T. Imagawa who found measles antibodies in the CSF of about 75 per cent of MS patients; higher than normal concentrations of the same antibodies in the sera of these patients were also observed. These observations have been confirmed by other investigators in a significant percentage of MS patients throughout the world. The antibodies have also been isolated from the brains of MS victims. Antibodies to other viruses, *e.g.* rubella, mumps, herpes simplex and vaccinia viruses, are also raised in MS patients but the levels

of these antibodies are lower than those to measles virus. Moreover, measles antigen has been detected by immunofluorescence technique in the jejuna and brains of MS patients.

Recently a parainfluenza virus (designated 6/94) was isolated from the brains of MS victims by co-cultivating such infected tissues with monkey kidney cell cultures. Another agent designated MS-associated agent (MSAA) was isolated by British workers from the brain, spleen, blood, or CSF of MS patients by inoculating these specimens into mice. The agent causes a decrease in the number of polymorphonuclear leukocytes in the inoculated mice and this effect can be blocked by sera from MS patients. More recently a cytopathic agent was isolated from the bone marrows of four MS patients in human (MRC-5, and HEp-2), monkey (Vero), and pig (PS) cell cultures. The cytopathic effects (CPE) of the agent could be serially passed in these cells and the CPE was inhibited by the patient's own or other MS sera. However, two independent American studies could not confirm the British findings.¹⁴ Whether the above three agents are causally connected with MS is still undetermined.¹⁵

Certain investigators have reported a significant correlation between familial cases of MS and intimate exposure to house pets, especially small indoor dogs, and have proposed that the canine distemper virus (a virus related to measles virus), transmitted from such pets to humans, could be involved in the development of MS. Other investigators could not confirm this correlation and failed to implicate this virus in the development of MS by both serological and long-term epidemiological methods.^{15, 16} A more recent study in Iceland (where distemper is not enzootic) indicated that MS can occur at high incidence in regions where canine distemper has been virtually absent for about 70 years or in the presence of a very limited dog population.¹⁷

Other approaches to the elucidation of the causes of MS have involved studies of genetic factors and also the disturbance of the host's immune mechanism which, in turn, may be manifested by a hypersensitivity phenomenon. In MS patients, the number of B lymphocytes is increased while that of T lymphocytes is decreased. Moreover, certain histocompatibility antigens (HL-A) of the B lymphocytes are increased in frequency in such patients as compared to normal individuals. It has been suggested that a familial factor, linked to the HL-A antigens, is responsible for the elevated measles antibody titers in MS patients. It has also been suggested that there may be, in MS patients, an MS

susceptibility gene that is linked to the specifically inherited HL-A antigens of these patients. On the other hand, a defect in the immune system, as manifested by depressed T lymphocytes' function and increased B lymphocytes' function, could be responsible for the enhanced humoral response as well as for the persistence of measles virus in MS patients. The hypersensitivity phenomenon is suggested by the similarity of pathological features of MS to those of experimental allergic encephalitis (produced by injecting brain homogenate combined with Freund's complete adjuvant) and postinfectious encephalomyelitis.

Epidemiological studies of SSPE and MS have revealed certain interesting features, namely, that SSPE occurs in individuals who have had measles before the age of 2 years and MS in those who have had measles at age 5-9 years. Moreover, SSPE is more common in males, in blacks and in the poor, while MS is more common in females, in whites, and among higher socioeconomic groups.

A recent study of the effect of long-term treatment of MS patients with the transfer factor did not show any arrest of the progressive degeneration of the CNS.¹⁸ Another study indicated that treatment of five MS patients with antithymocyte globulin failed to provide long-term beneficial effects.¹⁹ A more recent study showed no clinical improvement from intrathecal administration of cytarabine.²⁰

References

1. Diener, T. O.: Viroids: Structure and functions. *Science* 205:859-866, 1979. See also: Editorial: Viruses, viroids and Infectious diseases. *Lancet* 2:450-451, September 1, 1979.
2. Sutton, R. N. P.: Slow viruses and chronic diseases of the central nervous system. *Postgrad. Med. J.* 55:143-149, February 1979.
3. Gajdusck, D. C.: Unconventional viruses and the origin and disappearance of Kuru. *Science* 197:943-960, 1977.
4. Editorial: Transmission of Creutzfeldt-Jakob disease. *Lancet* 2:338-339, August 18, 1979.
5. Neugut, R. H. *et al.*: Creutzfeldt-Jakob disease: Familial clustering among Libyan-born Israelis. *Neurology* 29:225-231, 1979.
6. Matthews, W. B. *et al.*: Creutzfeldt-Jakob disease and ferrets. *Lancet* 1:828, 1979.
7. Manuelidis, E. E. and Manuelidis, L.: Experiments on maternal transmission of Creutzfeldt-Jakob disease in guinea pigs. *Proc. Soc. Exp. Biol. Med.* 160:233-236, 1979.
8. Albrecht, P. *et al.*: Subacute sclerosing panencephalitis: Experimental infection in primates. *Science* 195:64-66, 1977.
9. Cianchetti, C. *et al.*: Subacute sclerosing panencephalitis in Sardina. *Lancet* 1:829, 1979.
10. Murphy, M. F.: In vitro inhibition of subacute sclerosing panencephalitis virus by the antiviral agent ribavirin. *J. Infect. Dis.* 138:249-251, 1978.
11. London, W. T. *et al.*: Brain tumors in owl monkeys inoculated with a human polyomavirus (JC virus). *Science* 201:1246-1249, 1978.
12. Dorries, K. *et al.*: Detection of polyomavirus DNA in PML-brain tissue by in situ hybridization. *J. Gen. Virol.* 42:49-57, 1979.
13. Rand, K. H. *et al.*: Adenine arabinoside in the treatment of progressive multifocal leukoencephalopathy: Use of virus-containing cells in the urine to assess response to therapy. *Ann. Neurol.* 1:458-462, 1977.
14. Wallen, W. C. *et al.*; Huddleston, J. R. *et al.*; and Mitchel, D. N. *et al.*: Letters to the editor re attempts to isolate infectious/transmissible agents from bone marrow of patients with multiple sclerosis. *Lancet* 2:414-416, August 25, 1979.
15. Krakowka, S. and Koestner, A.: Canine distemper virus and multiple sclerosis. *Lancet* 2:1127, 1978.
16. Bunnell, D. H. *et al.*: Multiple sclerosis and house dogs: A case-control study. *Neurology* 29:1027-1029, 1979.
17. Nathanson, N.: Multiple sclerosis and canine distemper in Iceland. *Lancet* 2:1127-1129, 1978.
18. Fog, T. *et al.*: Long-term transfer-factor treatment for multiple sclerosis. *Lancet* 1:851-853, 1978.
19. Kastrukoff, L. F. *et al.*: Multiple sclerosis treated with antithymocyte globulin — a five year follow-up. *J. Can. des Sciences Neurologiques* 5:175-178, 1978.
20. Gore, M. *et al.*: Intrathecal cytarabine in multiple sclerosis. *Lancet* 2:204, July 28, 1979.

CHANGE OF ADDRESS

Please notify the
Kansas Medical Society
of any changes in address

*Help keep the mailing list
up to date*

Fibrinogen Uptake Test

Critique of Its Clinical Value

ERICH W. POLLAK, M.D., and KENNETH BARAT, R.T., *Kansas City, Missouri*

THE FIBRINOGEN Uptake Test (FUT) has been used in several thousands of patients both in the United States and in other countries for detection of deep venous thrombosis (DVT). Thanks to the papers of Kakkar and many others, its usefulness as a valuable research tool is now widely accepted, but its applicability and practicality in specific clinical situations needs further clarification.¹

Whether FUT is a superb diagnostic tool for the practicing physician, which can be used to solve diagnostic dilemmas and to change the course of therapy, or an unnecessary economic and time loss, depends primarily on the adequacy of indications for testing, technique of test performance, and criteria for interpretation of results.²

Following are suggestions to optimize FUT use. Data on which our conclusions were based have been published in the past, and reference to these data will be made here. The indications for testing, testing technique, and interpretation of results discussed are those presently in use at our noninvasive vascular laboratory of the University of Missouri, Kansas City, Missouri.

Indications for FUT

For the practicing physician, FUT has proved to be very useful in the following two clinical situations:

Detection of active DVT in patients with past history of venous disease. Patients with longstanding venous obstruction, who present with equivocal clinical findings vaguely suggestive of a new bout of thrombosis, present a diagnostic dilemma to the clinician. In the absence of previous results, new phlebography, Doppler test or plethysmographic tracings, it is impossible to reliably differentiate old venous obstruction from developing DVT.

Presented to the Annual Meeting of the American College of Surgeons, Kansas Chapter, at Salina, Kansas, November 12, 1978.

From the Noninvasive Vascular Laboratory of the Department of Surgery and the Nuclear Medicine Section, University of Missouri School of Medicine at Kansas City.

Address reprint requests to Dr. Pollak, 8940 Nall Avenue, Shawnee Mission, KS 66207.

The value of the fibrinogen uptake test in management of deep venous thrombosis has been reappraised and suggestions made for improving its use. It has been found that reliability is substantially increased when testing is conducted in strict adherence to specified indications and in accordance with prescribed testing techniques, and where criteria for interpretation of results are restricted.

Single FUT results are also equivocal in some of these patients, but positive serial FUT results correlate very well with the presence of active phlebitis, whereas negative serial FUT results exclude active thrombosis from consideration.²

Monitoring of adequacy of therapy in anticoagulated DVT patients. Prior research has shown that propagating thrombosis and pulmonary embolism can occur in fully anticoagulated patients or in those bleeding due to excessive anticoagulation.³ Serial patient monitoring with FUT detected these anticoagulation failures and allowed opportune therapeutic changes before occurrence of lethal pulmonary embolism.⁴ Following a single intravenous injection of the radiopharmaceutical, serial FUT testing was possible for about two weeks. When more prolonged testing was desired, a new injection of I-125 fibrinogen was administered.

Controversial Indications

Occasionally FUT is requested for reasons other than those shown above. Some of these indications are discussed below. We believe that the interests of the patient and of the clinician are better served if tests other than FUT are used in such circumstances.

Corroboration of a suspected diagnosis of DVT in patients without past history of venous disease. Since FUT implies serial testing, its use for definitive diagnosis of DVT implies withholding therapy for two or more days in patients who could develop potentially lethal complications. We found that to be unjustifiable because of the availability of other

diagnostic methods that could give reliable results in minutes.⁵

Use as a method to screen large patient populations for DVT. This indication is based on a large literature body describing the screening of various patient populations with FUT for investigational and academic purposes. Extension of this practice to clinical purposes is impractical because of the availability of noninvasive methods which are more acceptable to the patients, less cumbersome for the physician, and correlate better with development of clinically significant complications of DVT.⁶ Moreover, FUT is more expensive, time consuming, and requires more precautions than noninvasive testing. Radioactive environmental contamination and exposure of personnel becomes an issue when large patient populations are subjected to testing with a radionuclide having a relatively long half life (60 days). Finally, many positive FUT results are seen in patients who subsequently do not develop clinical findings. Moreover subsequent testing with FUT showed disappearance of previous positive findings, suggesting that the test was so sensitive as to detect minor clot formation lacking in clinical significance. Ultrasonic and plethysmographic methods are more appropriate than FUT for screening of large patient populations.⁷

Contraindications

FUT performance is discouraged in patients with extensive extravascular deposits of fibrin, such as burns, eczema, ulcers, hematomata, ecchymosis, or inflammation. Blunt trauma, hip fractures, and recent leg operations make the test unreliable.⁶ While the test has been used in orthopedic patients, its usefulness in detecting DVT in patients with hip fractures is less than optimal because of the above reasons.⁸ Use of FUT in such patients does not appear to be justified beyond a limited research project. Use of FUT is also discouraged in pregnant women and infants because of possible damage of the developing thyroid by I-125. Even when carefully prepared, vials of I-125 fibrinogen contained small amounts of free I-125.⁹ These amounts increased with the shelf life of the preparation. After injection, more free I-125 was released from I-125 fibrinogen by metabolic degradation of the product. Conceivably, following I-125 fibrinogen injection, circulating free I-125 could cross the placental barrier and be absorbed by the fetus. Until more data on the effect of tracer doses of I-125 on the developing thyroid become available, we abstain from using FUT in pregnant women, infants, and small children. When

FUT is done in non-pregnant but fertile women, avoidance of pregnancy for two months is advised.⁷ FUT is contraindicated for detection of hypogastric vein thrombosis because variable amounts of free I-125, always present in the urinary bladder and colon, interfered with thrombosis detection. Instruments presently available for FUT testing are inadequate for common and external iliac vein thrombosis detection. Consequently, FUT cannot be used for detection of pelvic vein thrombosis.⁵

Technique for Performance

Ratemeters and portable scalers are used to locate areas of increased radioactivity in the legs. Several different models were tried during the past six years in our laboratory. Results obtained with different testing devices were not equivalent ones. Data obtained with a scaler were in general more reliable than those obtained with a ratemeter, but required considerably more computations.⁹ Ratemeter results were rapidly available and were adequate for short term testing. During long term testing, such as when adequacy of anticoagulation therapy was monitored by FUT, ratemeters had definite disadvantages because the results did not take into account background radioactivity, whose relative importance increased with the duration of testing.

Since 1977, we have used the Ibrinator Portable Radioisotope Monitor (Amersham Searle Corporation), and the Model 2200 Portable Scaler Ratemeter (Ludlum Measurements Inc.). None of the commercially available detector probes had satisfactory collimation to limit detectable radioactivity to sources situated beneath the probe. This interfered with testing of the proximal part of the thigh, where radioactivity sources located in the urinary bladder and colon led to inaccurately high radioactivity readings. Consequently we systematically have used additional lead shielding of the detector probe to overcome this cause of error. Interference from I-125 contained in the abdominal organs was further minimized by encouraging fecal and urinary evacuation before each test. To minimize the large venous blood pool of the lower extremity, a 30-degree leg elevation was used during test performance.⁴

Thyroid blockade with orally administered Lugol's solution was started 12-24 hours prior to radiolabeled fibrinogen injection. Thyroid blockade was continued for at least five days after the radiopharmaceutical had been injected. From 50-100 μ Ci of I-125 fibrinogen were injected into a forearm vein. Radioactivity was then evaluated in a

midsternal position and in various positions of both legs, just overlying the major leg veins. Each position was marked with a dermatographic pencil for future reference. Initially, we marked only eight positions in each leg. During the past five years, we doubled the number of sites to be tested. Radioactivity is now measured in eight positions of the posterior midline of the calf, one position in the midportion of the popliteal fossa and seven in the anterior aspect of the thigh, overlying the femoral vein. Radioactivity in each leg position was recorded as a percentage of the midsternal radioactivity. Initial measurements were done two hours following I-125 fibrinogen injection. Subsequent measurements were made daily for a period of five days or more.

Following FUT performance, all patients were periodically observed for one month or more to detect appearance of clinical signs of DVT, pulmonary embolism, or side effects of testing. No side effects nor complications related to the use of FUT were detected.

A critical analysis of the technique for testing showed several causes for error. Patients who recently had undergone lung scanning showed persistent Tc-99m entrapment in the sternal bone marrow. In spite of the use of special detector probes to limit radioactivity detection to the spectrum of I-125, there was also uptake of the harder Tc-99m radiation. In some patients, Tc-99m — in spite of its short physical half life (six hours) — could be detected for as long as three days following radionuclide injection, and interfered with accurate FUT performance by causing unreliable measurements in the midsternal reference position. Other technical errors were due to lack of familiarity with the anatomy of the region. Some technicians were actually testing the region of the fascia lata, instead of the triangle of Scarpa, for femoral vein thrombosis. Testing of the posterior midline of the calf presented difficulties in some critically ill patients who were connected to multiple monitors and life support systems. An assistant was required in such circumstances to elevate the leg during testing while avoiding further patient mobilization. Patients with morbid obesity were also difficult to test because more than $1 \mu\text{Ci}$ of I-125 had to be present in a site to be detected by a probe located at more than 4 cm from the source.¹⁰ Alternate diagnostic methods were considered for these patients. Since the midsternal radioactivity count was used as the reference point for all lower extremity measurements, it was postulated that no abnormal fibrin deposits existed in the underlying heart. When thrombi existed in the heart chambers, another point

of reference had to be chosen to obtain reliable results.

Interpretation of Results

Diverse criteria were used in the past to evaluate FUT results.¹ In essence, most of them derived from one or more of the following criteria for positivity:

Criterion I: Twenty per cent or more increased percentage count in one position when compared with results in the symmetric position on the opposite leg.

Criterion II: Twenty per cent or more increased percentage count in one position when compared with adjacent positions in the same leg.

Criterion III: Increased percentage count in the same position during serial testing.

Application of Criterion I did not take into account the fact that DVT was frequently a bilateral disease, and led to unsatisfactory results. Criterion II did not provide a method to detect massive thrombosis of the leg, where all positions had similarly elevated radioactivity levels. Moreover, when Criteria I and II were jointly used, 8 per cent of normal controls and 100 per cent of patients with longstanding inactive venous obstruction had positive FUT results.¹⁰ Shape analysis of the percentage count curve obtained after a single FUT also proved to be unreliable because some of the most serious looking curves were obtained in patients without active disease. In these cases, serial FUT showed progressive normalization of the curve and consequently indicated absence of active thrombosis.¹²

Positive FUT results according to Criterion III correlated best with actively forming thrombosis. In our experience, when Criterion III was used for interpretation of FUT results, positive test findings in the absence of errors of technique or erroneous indication for testing were always consistent with active DVT and indicated the necessity of active therapy or major therapeutic changes.⁴

Comments

Serial FUT, when properly indicated, thoroughly performed and interpreted according to the standards of Criterion III, was in our hands a valuable tool to solve diagnostic problems and to suggest necessary therapeutic changes. In patients with negative FUT, no clinical nor angiographic evidence of development of DVT or pulmonary embolism was encountered in our series. Similar results were obtained by Ruckley in more than 700 patients.¹² Negative phlebographic results in patients with positive FUT did not necessarily indicate test error. False

phlebographic findings have been reported due to technical errors in phlebography performance or location of thrombosis in areas inaccessible to phlebography.¹³ Past experience of many authors has shown FUT to be more sensitive than phlebography for detection of calf vein thrombosis. Moreover, positive FUT results have been reported following negative phlebography. Animal experiments have shown that this may be related to the ability of FUT to detect endothelial damage and mural thrombosis due to phlebography performance. For similar reasons it has been suggested that FUT could be used to detect the site where pulmonary emboli originated, one or two days after its occurrence, even if phlebography was unable to evidence residual venous thrombosis.¹⁴

The FUT was not intended to be used in patients with extensive extravascular fibrin deposits. If performed in such patients, unreliable results will be obtained. Likewise, FUT was not designed to detect longstanding venous obstruction. There are better tests available for this purpose. The absolute value of FUT cannot be determined by correlating FUT results with those of radiographic phlebography. They are not supposed to correlate in 100 per cent of cases because they are different and reach to different aspects of the thrombotic process. The time has come for us to cease to wonder about which method is superior to the other and that we rather realize the peculiar indications for the use of each method and how each can be used to improve the quality of medical care for the individual patient.

References

1. Roberts, V. C.: Fibrinogen uptake scanning for diagnosis of deep vein thrombosis: A plea for standardization. *Br. Med. J.* 3:455-458, 1975.
2. Pollak, E. W.: Diagnosis of venous thrombosis: A 1976 update. *West. J. Med.* 124:229-230, 1976.
3. Pollak, E. W. *et al.*: Detection of anticoagulation failures in patients with venous thrombosis. *Am. J. Surg.* 134:214-216, 1977.
4. Pollak, E. W.; Webber, M. M. and Wolfman, E. F., Jr.: Inferior vena cava interruption: A new indication? *Arch. Surg.* 110:1008-1011, 1975.
5. Pollak, E. W.: The choice of test for diagnosis of venous thrombosis. *Vasc. Surg.* 11:219-226, 1977.
6. Pollak, E. W. and Pollak, M.: Deep venous thrombosis: Methods of laboratory diagnosis. *J. Kans. Med. Soc.* 79:207-210, 1978.
7. Pollak, E. W. *et al.*: Radioisotope detection of venous thrombosis: Venous scan vs fibrinogen uptake test. *Arch. Surg.* 110:613-616, 1975.
8. Harris, W. H. *et al.*: Comparison of ¹²⁵I-fibrinogen scanning with phlebography for detection of venous thrombi after elective hip surgery. *N. Engl. J. Med.* 292:665-667, 1975.
9. Hawker, R. J. *et al.*: Fate of ¹²⁵I-labelled fibrinogen. *Lancet* 2:1099-1100, 1975.
10. Pollak, E. W. *et al.*: Autologous ¹²⁵I-fibrinogen uptake test in the detection and management of venous thrombosis. *Arch. Surg.* 109:48-51, 1974.
11. Pollak, E. W.; Webber, M. M. and Victory, W.: Fibrinogen uptake test: Criteria for interpretation of results in patients with venous thrombosis. *Am. Surg.* 43:119-122, 1977.
12. Ruckley, C. V.: ¹²⁵I-fibrinogen uptake test in diagnosis of deep venous thrombosis. *Br. Med. J.* 3:498-499, 1975.
13. Moser, K. M.; Brach, B. B. and Dolan, G. F.: Clinically suspected deep venous thrombosis of the lower extremities: A comparison of venography, impedance plethysmography and radiolabeled fibrinogen. *JAMA* 223:2195-2198, 1977.
14. Kerrigan, G. N. W. *et al.*: Investigations of the mechanism of false positive ¹²⁵I-labeled fibrinogen scans. *Br. J. Haematol.* 26:469-473, 1974.



AMERICAN MEDICAL ASSOCIATION 1979 INTERIM MEETING OF THE HOUSE OF DELEGATES

Honolulu, Hawaii

December 2-5, 1979

Special Series — IV

Estrogen Receptors in Breast Carcinoma

ANTONIO HUAMAN, M.D., *Topeka*

THE TREATMENT of disseminated breast carcinoma has taken a new direction since the discovery of estrogen dependence that was demonstrated in some of these tumors. The concept is not new; in fact, it was first formulated by Bateson in 1896 when he observed regression of metastatic mammary carcinomas in women of gestational age. It later became the basis for ablative endocrine treatment of breast cancer by adrenalectomy and hypophysectomy, and at the present time it has been substantiated by several investigators — among them Folca¹ — who demonstrated selective uptake of tritium labeled hexoestrol by cutaneous metastasis of breast carcinoma. Determination of estrogen dependence, however, did not become a practical matter until Jensen and Wittliff devised methods for titration of the estrogen receptor in tissue extracts. On the basis of estrogen receptor assays, breast carcinomas are presently classified as estrogen dependent tumors which respond to endocrine therapy, and autonomous tumors for which endocrine treatment is useless.

Biochemical Principles of Estrogen Dependence

Estrogen dependence of normal breast cells has been explained as biochemical reactions occurring between the circulating estradiol and the breast cell. These reactions, according to Gorski and Jensen,² occur in the following sequence: First, the circulating estradiol penetrates the cellular membrane by passive diffusion. Second, the estradiol combines with an estrogen binding protein (estrophilin) and forms an estrogen receptor complex which subsequently undergoes activation and translocation into the nucleus. Third, the activated steroid receptor combines with the nuclear chromatin and stimulates RNA synthesis for the formation of estradiol binding proteins or estradiol receptors.

Normal breast tissue contains receptors for estrogens, progesterones, glucocorticoids, and androgens depending on the degree of differentiation of the

mammary cells. The normal estrogen affinity of the mammary cells is retained by some carcinomas of the breast that are therefore known as estrogen dependent tumors, while those non-dependent carcinomas are considered autonomous.

Determination of Estrogen Receptors

Estrogen receptor analysis in the laboratory is presently done by two methods: the radioactive competitive analysis (better known as the cytosol method); and by immunofluorescent staining of tumor sections.

The *cytosol method*, devised by Wittliff *et al.*,³ is performed on tissue extracts known as cytosols. The biopsy tissue must be frozen immediately at -70°C to prevent loss of receptor activity. At least 500 mg of tumor tissue without fat are required. The frozen tissue is powdered before testing and the receptors are extracted in tris-HCl buffer at pH 7.4. The extract is treated with tritium-labeled estradiol-17B to form a radioactive estrogen receptor complex (bound) while the excess remains free (unbound) in the test tube. The unbound radioactive estradiol is absorbed by dextran-coated charcoal particles, and the bound-unbound index is determined. The concentration of estrogens correlates with the index and is obtained from a concentration curve. Estrogen receptors are reported in femtomoles (10^{-15}gm)/mg of protein in the cytosol. Tumors containing 0-9 femtomoles/mg are considered negative and those containing more than 9 femtomoles are considered positive. This technique is widely available in the United States from regional laboratories and academic institutions.

The same authors have advanced the characterization of the estrogen receptors one step further by determination of the molecular size of the receptors through ultracentrifugation. The method — known as sucrose gradient ultracentrifugation — reveals that estrogen receptors can be divided into two categories, one with a molecular size comparable to 8S and 9S immunoglobulins (S = Svedberg number) and others with molecular size comparable to albumins (4S-5S). The molecular size hopefully may distinguish normal and abnormal estrogen receptors.

Address reprint requests to Dr. Huaman, 631 S.W. Horne, Suite 5, Topeka, KS 66606.

Immunofluorescent stainings are performed on frozen sections of the biopsy tissue, and the estrogen receptors are demonstrated by immunofluorescent microscopy. At least three different approaches to this technique have been reported by Pertschuk,⁴ Lee,⁵ and Mercer.⁶ The latter investigator utilizes a double antibody technique. Immunofluorescent methods allow for the direct observation of estrogen receptors in the tumor cells. These methods reveal that carcinoma of the breast actually consists of receptor-positive and receptor-negative cells in varied proportions; that estrogen receptors might be present either in the nucleus or in the cytoplasm; and that the overall concentration of the estrogen receptors in dependent tumors is directly related to the cellularity of the tumor.

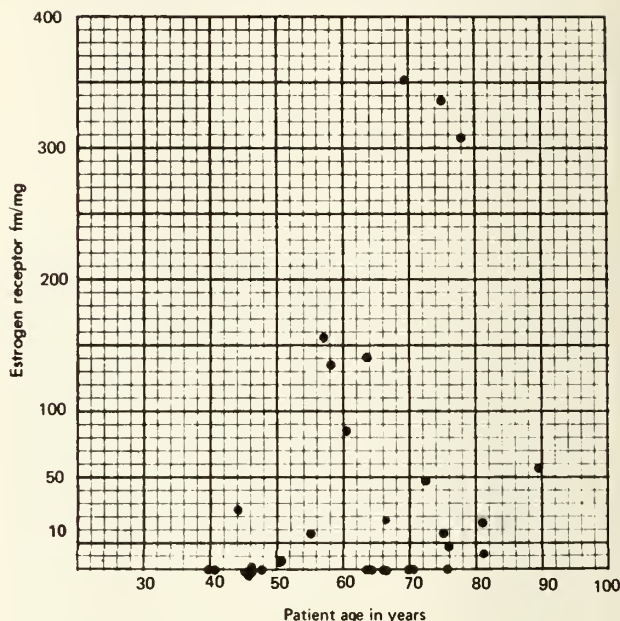
The correlation between cytosol techniques and immunofluorescent techniques has been clarified by Pertschuk⁴ who found that 5 per cent of all breast carcinomas are completely negative. Tumors showing up to 10 per cent of positive cells are also negative, and only tumors with 20 per cent or more fluorescent cells are positive by the cytosol technique. As for the localization of estrogen receptors — according to the same author — nuclear fluorescence is more frequently due to receptors with smaller molecular weight (4S) while cytoplasmic fluorescence is more frequently due to receptors with larger molecular weight (8S).

The concentration of estrogen receptors does not correlate well with the age of the patient, although they appear to occur more frequently in women of post menopausal or menopausal age. Our limited series of 30 cases shows positive titers in 50 per cent of the cases, 80 per cent of whom were past the age of 50 years (*Figure 1*). There is no accurate correlation with histological type or differentiation; however Rosen *et al.*⁷ reported the highest concentration of estrogen receptors in invasive lobular carcinomas (93%), and about equal percentage in tumors of ductal origin. In our limited experience we have found the highest concentration in infiltrative mucinous carcinoma of the breast, while invasive ductal carcinomas are about equally divided between positive and negative.

Clinical Application of Estrogen Receptors

Radical mastectomy and its variants constitute the treatment of choice of newly discovered breast carcinoma. Urban⁸ reports 10-year survival rates of 33 per cent for conventional radical mastectomy, 55 per cent for extended radical mastectomy, and 95 per cent for modified radical mastectomy. Cancer of the breast, however, will eventually recur and metas-

Figure 1
Age and titer correlation



tasize beyond surgical scope, and a systemic therapeutic regime — such as endocrine therapy — will be necessary. The determination of estrogen receptors then becomes critical, since only estrogen dependent carcinomas respond to this form of therapy.

Estrogen Receptors and Ablative Endocrine Therapy. The concentration of estrogen receptors is a far better indication for ablative endocrine therapy than the age of the patient, since dependent tumors occur during and after reproductive age. If the tumor under management happens to be of the autonomous type, unnecessary oophorectomy, adrenalectomy, or hypophysectomy can be avoided. Estrogen dependent tumors, on the other hand, respond favorably to endocrine therapy in 55-60 per cent of the cases, according to McGuire.⁹ Furthermore, correlation with menopausal status, disease free interval, site of dominant lesion, and response to previous hormonal therapy will allow the selection of surgical ablation for only those patients who can favorably respond to this type of treatment.

Estrogen Receptors and Anti-Estrogens. Anti-estrogen agents found during the development of anti-fertility drugs interfere with the effect of estrogen on its target organs. They act either by saturation of the estrogen receptors of the cell or by preventing the synthesis of cytoplasmic estrogen receptors in the nucleus. According to Legha *et al.*,¹⁰ clomiphene citrate (Clomid), nafoxidine (U-11, 100A) and

tamoxifen (ICI-46, 474) have induced remissions in human breast cancer. The experience with tamoxifen in the United States indicates that 73 per cent of patients with estrogen-dependent tumors responded with tumor regression, according to Morgan; in sharp contrast, there was almost no response by autonomous tumors. Mosseson correlated the length of remission with the concentration of estrogen receptors and found that patients with concentrations greater than 10 femtomoles/mg experienced remissions of up to 13.5 months and patients with titers below 10 femtomoles/mg had remissions of only about 5.5 months. Since anti-estrogens have been available for only a few years, there are no long-range studies available, but their use will increase in the near future. For instance, it has been suggested that they should be utilized prior to ablative therapy and only those patients responding to this treatment should undergo oophorectomy, adrenalectomy, hypophysectomy, or combinations thereof. At any rate, the efficiency of these drugs will undoubtedly be increased as a result of patient selection by estrogen receptor assays.

Estrogen Receptors and Metastatic Carcinoma. Metastatic carcinomas of unknown primary origin are another use of estrogen receptor assays. Only carcinomas of the endometrium, prostate, and breast may contain estrogen receptors. When prostatic and uterine carcinomas are ruled out, the tumor will, in all likelihood, be primary in the breast. This will be of considerable diagnostic importance in metastatic axillary tumors with minute primary tumors of the breast and carcinomas from heterotopic breast tissue.

Estrogen Receptors and "Minimal" Carcinoma. Minute primary carcinomas of the breast are being increasingly discovered in large population screenings by increased use of mammography and xeroradiography. There is usually enough tissue for histologic diagnosis but there may not be an adequate specimen for cytosol techniques. The utilization of immunofluorescence will resolve this difficulty in the near future so that early breast carcinomas may still be classified as either dependent or autonomous.

In summary, determination of estrogen receptors is now an indispensable step in the management of breast carcinoma and must be performed on the first biopsy or excision of the tumor regardless of age or sex of the patient, or the stage of the disease. The estrogen dependency or autonomy of the tumor will be critical for the institution of hormonal treatment in the very likely event that the cancer will recur and metastasize.

References

1. Folca, P. J.; Glascock, R. F. and Irvine, W. T.: Studies with tritium-labeled hexoestrol in advanced breast carcinoma. *Lancet* 2:796-798, 1961.
2. Jensen, E. V. *et al.*: A two-step mechanism for the interaction of estradiol with rat uterus. *Proc. Natl. Acad. Sci. USA* 59:632-639, 1968.
3. Wittliff, J. L. *et al.*: *Estrogen Receptors and Hormone Dependency in Human Breast Cancer: Recent Results in Cancer Research*. Berlin, Springer-Verlag, pp. 57, 59-77, 1976.
4. Pertschuk, L. P.; Tobin, E. H. and Brigati, D. J.: Immunofluorescent detection of estrogen receptors in breast cancer. *Cancer* 41:907-911, 1978.
5. Lee, S. H.: Cytochemical study of estrogen receptor in human mammary cancer. *Am. J. Clin. Pathol.* 70:197-203, 1978.
6. Mercer, W. D.; Carlson, C. A.; Wahl, T. M. and Teague, P. O.: Identification of estrogen receptors in mammary cancer cells by immunofluorescence. *Am. J. Clin. Pathol.* 70:330, 1978.
7. Rosen, P. P.; Menendez-Botet, C. J. and Nisselbaum, J. S.: Pathological review of breast lesions analyzed for estrogen receptor protein. *Cancer Res.* 35:3187-3194, 1975.
8. Urban, J. A.: Management of operable breast cancer: The surgeon's view. *Cancer* 42:2066-2077, 1978.
9. McGuire, W. L.; Pearson, O. H. and Segaloff, A.: Predicting hormone responsiveness in human breast cancer. *Estrogen Receptors in Human Breast Cancer* (McGuire *et al.*, eds.). New York, Raven Press, pp. 1-7, 1975.
10. Legha, S. S.; Davis, H. L. and Muggia, F. M.: Hormonal therapy of breast cancer: New approaches and concepts. *Ann. Intern. Med.* 88:69-77, 1978.

Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.



Current COMMENT

Malignant Hypertension

VIRGINIA J. SAVIN, M.D.,* *Kansas City, Kansas*

MALIGNANT HYPERTENSION is a syndrome with symptoms including markedly elevated blood pressure, papilledema, and renal failure associated with a fibrinoid and proliferative vascular lesion. The condition is aptly called "malignant" because multiple organ systems are affected by a rapidly progressive and often fatal process. If patients are not treated, 60-80 per cent will die within one year and 90-95 per cent within two years. About 70 per cent will succumb to a combination of uremia and congestive heart failure; about 20 per cent will die of strokes.

Clinical Presentation

Malignant hypertension is most common in patients between the ages of 35 and 50 years; most present with headaches, blurring or loss of vision, shortness of breath, nausea, vomiting, and weight loss; it is more frequent in blacks than whites and in males than females. Although malignant hypertension may appear *de novo*, many patients have a previous history of hypertension. Blood pressure is markedly elevated with diastolic blood pressure usually in excess of 130 mm Hg. Some patients are especially susceptible to the central nervous system (CNS) effects of hypertension; children and pregnant women may experience hypertensive encephalopathy with diastolic blood pressure as low as 90-100 mm Hg. Papilledema is present, often with severe arteriolar spasm, flame-shaped hemorrhages, and cotton-wool exudates. Blindness may occur but is almost always transient. Cardiomegaly with left ventricular hypertrophy and pulmonary congestion may be prominent. Peripheral edema may or may not

be present. EKG may show tachycardia, left ventricular hypertrophy, or ischemic changes; and chest x-ray may reveal varying degrees of cardiomegaly and pulmonary vascular congestion. Laboratory findings include an elevated BUN and creatinine, and in some cases evidence of microangiopathic hemolytic anemia. A markedly elevated erythrocyte sedimentation rate with values in excess of 100 is common. Cerebrospinal fluid findings include elevated pressure and increased protein. Electrolyte and acid-base status varies with the degree of the renal failure, and blood gas abnormalities with the severity of pulmonary edema. Urinalysis may reveal small to moderate proteinuria and hematuria; no RBC casts are seen unless the patient has underlying glomerulonephritis.

Pathology

Pathologic alterations are most prominent in the central nervous system and in the kidneys. Arterioles in the brain undergo severe uniform or segmental spasm. Edema and small hemorrhages within the cerebral cortex are common. Fibrinoid necrosis with leaking of serum proteins into damaged vascular walls and intravascular thrombosis may be seen. Kidneys are initially large, smooth, and swollen. The cortex is pale and covered with tiny hemorrhages. Later, scarring occurs and kidneys may become quite small with a finely granular surface. Arterioles show proliferation of endothelial and smooth muscle cells, duplication of the internal elastic lamella, and narrowing and eventual obliteration of the vascular lumen. Fibrinoid necrosis may be seen in areas of severely impaired perfusion. Chronic changes include sclerosis of both arterioles and glomeruli, patchy tubular atrophy, and interstitial fibrosis.¹

* Assistant Professor of Medicine, University of Kansas School of Medicine, Kansas City, Kansas.

Address reprint requests to Dr. Savin, UKSM-KC, 39th & Rainbow Blvd., Kansas City, KS 66103.

Pathogenesis

Malignant hypertension most often occurs in patients who have previously experienced hypertension. The cause of the transformation from a benign to a malignant state is not known, although the unifying factors are the severity of the hypertension and the occurrence of vascular injury. Malignant hypertension may be experimentally produced by saline loading, administering vasopressors, or by producing high renin hypertension by renal artery constriction. Hormones — such as renin and vasopressin — may be predisposing factors, but neither produce vascular injury themselves, nor are they necessary mediators. In the brain, increased blood pressure causes reflex arteriolar spasm. If this continues, focal areas of ischemic tissue develop. If elevated pressure persists, the spasm is overcome and the brain becomes hyperemic and edematous. Observations of other vascular beds show intermittent perfusion of arterioles caused by spasm and formation of fibrin clot within the vessels. Strands of fibrin may interfere with RBC movement and cause hemolysis and platelet destruction. Ischemia, intravascular clotting, and high pressure combine to perpetuate vascular injury and lead to a cycle of progressive tissue injury, particularly in the brain and kidney (*Figure 1*). Conditions that are associated with high renin (renal artery stenosis), increased coagulation (the post partum state), with vascular injury (lupus, scleroderma, and hemolytic uremic syndrome), or end organ damage (chronic glomerulonephritis) predispose to malignant hypertension. Such underlying conditions should be recognized early and treated specifically if possible.

Treatment

Treatment should be aimed at interrupting the cycle of hypertension, vascular spasm and leaking, and tissue ischemia and edema by lowering the blood pressure promptly. Blood pressure should be maintained in the normal range while the patient is stabilized and evaluated and appropriate patient education is accomplished. Long-term followup and blood pressure control is mandatory.

Emergency treatment should include prompt reduction of blood pressure to normal levels. Without such treatment patients will likely succumb to uremia, heart failure, or stroke. Normalizing blood pressure will often bring prompt relief of CNS dysfunction and angina.² The intravenous route is usually most appropriate in acutely ill patients who may be unable to take oral medication because of coma or vomiting and who may perfuse muscle beds poorly. Vasodilators are usually needed. Some — such as

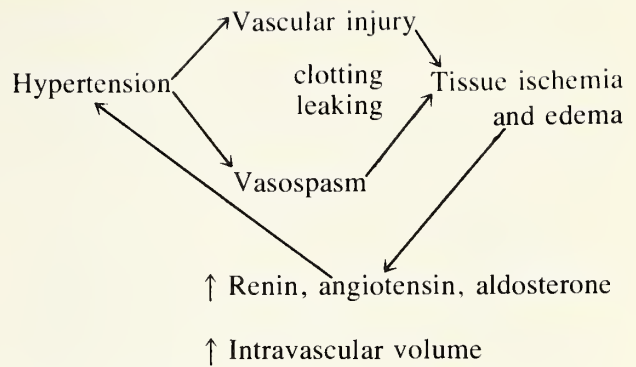


Figure 1. Pathophysiology of malignant hypertension.

nitroprusside — have immediate and short-lived effects and require the use of constant infusion devices and continuous arterial pressure monitoring via intra-arterial line. Nitroprusside may be used without toxicity for prolonged periods in patients with normal renal clearance but should be used for no more than 24-48 hours in patients with renal failure.³ Other vasodilators such as diazoxide or hydralazine also produce rapid lowering of blood pressure, have a more prolonged effect, and may be given by intermittent intravenous infusion without intra-arterial monitoring. Beta-adrenergic blockers are useful in conjunction with vasodilators to prevent reflex tachycardia and angina. Drugs that have CNS depressant effects should be avoided if obtundation is already present. Diuretics are essential when intravascular volume is increased and are indicated to maintain urine output and prevent fluid retention in almost all patients who are treated with vasodilators. Furosemide (Lasix) is usually chosen since it may be given intravenously and is effective even in the presence of moderate renal failure. Many potent pharmacologic agents are now available that permit rapid and safe control of blood pressure in nearly every patient and obviate the use of sympathectomy or bilateral nephrectomy for blood pressure control (*Table 1*). Despite the presence of intravascular coagulation, anticoagulation is usually contraindicated because of bleeding complications.

When the patient is stable, a regimen of oral medications should be established. Vasodilators, β -blockers, and diuretics may be included. Choice of specific agents and doses must be made to maintain blood pressure within the normal range without unacceptable symptoms of sedation, postural hypotension, or angina. A simple regimen is preferable but multiple daily doses of several drugs are usually required. Sodium restriction may improve blood pressure control while allowing the use of reduced

TABLE I
EMERGENCY TREATMENT OF MALIGNANT HYPERTENSION

	<i>Dose</i>	<i>Onset of Action</i>	<i>Duration of Action</i>
Vasodilators			
Nitroprusside	IV 50-150 mg/L 0.03-0.05 mg/min	1 min	3-5 min
Diazoxide	IV 100 mg/bolus over 1 min — repeat at 5 min intervals if needed	1-2 min	4-18 hrs
Hydralazine	IV 20-40 mg over 20 min or IM	10-20 min	2-6 hrs
Sympathetic Inhibitors			
Propranolol	IV 1-3 mg at 0.2 mg/min	1-2 min	3-6 hrs
Methyldopa	IV 250 mg in 30 min	1-3 hrs	6-10 hrs
Reserpine	IV or IM 0.25-5 mg	1-4 hrs	6-24 hrs
Diuretics			
Lasix	IV 40-500 mg	15-30 min	2-6 hrs

doses of diuretics. In patients with compromised renal function, potent vasodilators such as minoxidil remain effective. The use of these vasodilators is often accompanied by a weight gain of up to 10 kg without edema or heart failure.⁴

Long-term followup of patients should include frequent monitoring of blood pressure with adjustment of medications as needed and periodic followup of renal and cardiac status. Because of the chronic nature of hypertension, patient education and cooperation are necessary for successful management. Patients should be taught the importance of blood pressure control. Most patients should be encouraged to take and record daily blood pressure measurements and to learn the name, dose, and purpose of each of their medications. Nurse practitioners or other health professionals can be extremely helpful in providing followup.⁵

The response of patients to treatment is often dramatic. Mental function may improve within hours; vision usually returns promptly. Arteriolar spasm — visible in the fundi — resolves rapidly although papilledema may persist for several weeks. Pulmonary edema and angina usually resolve unless the underlying cardiac disease is severe. Renal function is likely to improve more slowly. If the initial BUN is below 50 mg/dl, renal clearance will probably improve early in the course of treatment. If renal injury is more severe, BUN and creatinine may rise transiently, sometimes to levels producing uremia and

requiring dialysis support. Because of this, patients with severely compromised renal function should be considered for early transfer to a center with dialysis facilities. Nearly all patients will show eventual improvement in renal function.⁶ In patients who have underlying renal parenchymal disease, control of hypertension may result in stabilization of renal function while lack of such control is often associated with rapidly progressing renal failure. Even patients who require dialysis may experience return of life-sustaining renal function after several months of blood pressure control and regular dialysis.⁷

The benefits of treatment of malignant hypertension are evident in the dramatic decline in deaths from this cause. Untreated patients face a grim future of repeated episodes of confusion, seizures, heart failure and eventual uremia or stroke, and death; only 5 per cent will live for two years. Patients who are treated and whose blood pressure is maintained at normal levels can expect relief of symptoms and stabilization of renal function, and more than 2/3 will be alive after two years.⁸

While it has been estimated that as many as 1 per cent of essential hypertensives develop a malignant phase, treatment of benign hypertension is associated with increased survival and a decreased occurrence of strokes.⁹ The incidence of malignant hypertension has declined during recent years concomitant with general recognition of the efficacy of treating moderate hypertension. Blood pressure

Malignant hypertension with diastolic blood pressure >130 mm Hg, papilledema, and azotemia constitutes a medical emergency. Prompt and aggressive treatment with normalization of blood pressure results in reversal of vascular lesions and permits recovery of cerebral and renal function. Continued blood pressure control reduces the incidence of stroke and possibly of myocardial infarction and improves long-term survival.

1. Patients with malignant hypertension are usually asymptomatic.
2. If renal function is impaired, blood pressure should be allowed to remain elevated.
3. Papilledema may take weeks to resolve.
4. Single drug therapy is usually adequate for patients with malignant hypertension.
5. Potent vasodilators may be effective even in the presence of renal failure.

(Answers on page 622)

Many members are still using the expensive way

The Compensation rules further state that these totals must be available and presented to auditor at time of call. If not, the policyholder is not permitted any later or retroactive adjustment after audit is made.

Total Hrs 54	Straight Time			Overtime (Time & One-Half)			Gross Wages	Expensive Way
	Hrs.	Rate	Amount	Hrs.	Rate	Amount		
	40	\$4.00	\$160.00	14	\$6.00	\$84.00	\$244.00	Allowable Overtime Deduction
				Less: 1/3rd of overtime pay			(28.00)	
				Payroll Applicable to Premium			\$216.00	Acceptable Way

The President's Message

Although it hardly seems possible, my year as your president is now half finished.

I'm trying to maintain the proper perspective regarding your practice and mine in the medical climate of America today. This is sometimes difficult because of the constant pressures of our government in its efforts to undermine the private practice of medicine as we know it. The drive toward national health insurance; federal financial support of HMOs; the FTC push to discredit our specialty societies; the suits against us by chiropractors and other paraprofessionals; the constantly increasing mound of paperwork which results in greater expense, less efficiency, and less time for adequate patient care; and the constant pressure toward cost containment with little or no concern for quality of care make it difficult for me to maintain my perspective.

However, at this time of year I think it is important that some things be said in a positive tone: (1) I'm still thankful that I am practicing medicine in the United States of America, and I wouldn't trade with any doctor in any other country at this time; (2) it's great to be in Kansas, the state of clean air and beautiful, friendly people; (3) I am thankful for elected officials on the local, state, and national levels who are willing to listen to my viewpoints, and I am grateful for a system of government that makes it possible for me to have an input into my government; (4) I am thankful for religious freedom as well as political freedom; (5) I am grateful for a family and friends who have supported me throughout the years; (6) at the medical society we are blessed by a skilled, conscientious, dedicated staff; and (7) I want to thank all the members of the medical society who have had any part in working on committees, commissions, or on a personal level. You are the real heroes of The Kansas Medical Society.



During this Thanksgiving season, I hope that each of you will join me in saying thanks to those who work with you day-by-day in your office and at the hospital.

Happy Thanksgiving Day to each of you.

Fraternally

A handwritten signature in dark ink that reads "Donald C. Goring, MD". The signature is written in a cursive style.

President



Face in the Crowd

We've found our thoughts turning of late to that classical stateroom scene of the Marx Brothers with its wall-to-wall people. This hasn't been an exercise in nostalgia but a contemplation of that entity called the health care delivery system. The old term, medical care, is seemingly inadequate these days since we are now obligated to the medical (and much of the social) regulation of the lives of those not yet sick and those no longer sick, as well as the active members.

The increasing penetration of non-medical activists into medical practice has put the physician so consistently on the defensive that he is in danger of losing his perspective regarding this medical structure of which he has been a rather important part. In the last couple of generations, medical practice has seen a proliferative phenomenon unmatched by any except the federal bureaucracy. At one time, mentioning medical service automatically referred to the physician, but personnel accretions have altered the concept. Time was when the crowd around the prostrate victim would part with respect and relief when the fellow with the little black bag said briskly, "I'm a doctor. Let me through, please." Now, the response is, "Get in line, bub."

In the beginning, there were physician and nurse. Exactly which came first is lost in the fog of prehistory, but the public inaccurately dates nursing from Florence Nightingale whose real claims to fame were a flair for medical logistics and a penchant for baiting a stuffy male medical establishment (which now stand as more prophetic than any one then realized). The last century (whose medical successes are matched only by its medical problems) has seen the physician's associates propagate exponentially. The nurses have turned over large segments of their work to subsidiary groups and have extended themselves in various directions, including one that would par-

ticularly please Florence, the nurse-practitioner. Meantime, the belief that there just aren't enough physicians to go around, as well as the certainty that much of the physician's time is taken up with duties not utilizing the full extent of his training, has resulted in the production of the physician's assistant.

Down the hall, the laboratory has been turning out technical mutations, no longer content to do just blood counts and urinalyses but dedicated to esoteric studies more dependent on electronics than pathology. They have been joined by radiologic technicians, respiratory technicians, dietary technicians, and physical therapists. The emergency room went by default to a new specialist, the emergency room physician, who presided over the metamorphosis of the ambulance driver into an emergency medical technician. The administrative side of medicine has spawned a formidable array of technicians to collect, scrutinize, and dispense medical records. Even the practice management people, in their regulation of the physician, exert an influence on the patient they never see.

So the point is made, and we move on in full knowledge that we have barely touched on the list. Once the auxiliary discipline has been established, the participants fall into a pattern derived, of course, from the parental example. First, they respond to that human urge that lies only slightly below the sexual — the desire to organize. They set forth rules and regulations and appoint committees to ensure their purity of purpose in the interest of the patient (though interpreted by some cynics as self-serving). The political action committee heralds their awareness of survival tactics. Next come the intramural squabbles with the formation of factions and splinter groups. Finally, full maturity is indicated by their declaration of independence from physician control, subject, of course, to negotiation.

This is by no means to disparage these associates of ours. After all, their emergence is a product of the medical progress for which the physician, with only an occasional blush, has taken credit. His attitude derives not only from the very real contribution on his part but his concentration on the performance of these individuals more than the individuals themselves. Absorbing good service as the norm and preoccupied by more pressing responsibilities, he tends to acknowledge these associates only by critical response to some error or shortcoming, not a situation designed to produce a mutually satisfying relationship. This is why, in moments of severe stress as, for example, in some liability action, any mutual love tends to evaporate rather quickly to the delight of those who want to play one against the other.

But even as the number and the need of these assistants (generic term) is a measure of the diversity and complexity of contemporary medical function, we should recognize that the birth of each new agent is accompanied by an increase in the cost of medical care. The profession justifies these increases in terms of the improved diagnostic and therapeutic modalities, a valid assessment deficient only in the fact that the patient (and his bill payer) have not understood the process. So the physician is confronted with the proposition that his contribution to any reduction in the cost of medical care must come either from direct reduction of his own remuneration (O cursed spite!) or a reduction in the use of the services of these individuals, again not a situation conducive to a loving relationship.

The volume and character of criticism directed toward the medical community (by whatever name) in the face of obvious and demonstrable successes suggests that the whole is less than the sum of its parts. If there has been a consistent theme in the criticism, it has been the patient's feeling of loss of personal attention. This, from one standpoint, is understandable since the fragmentation of services and multiplicity of attendants confuse and irritate the patient rather than impress him with the extent of interest in his case. We admit that the approach is at least oblique, but we suggest that this situation would be distinctly improved if each of the individuals involved in attending the patient felt a personal desire to relate as much as possible to him as an individual, and that these people would in turn be more inspired to perform in such a manner if they receive the appropriate good will and support of the physician.

There are more dramatic activities available, many that may seem more urgent, and we recognize that the medical agenda is full to overflowing. But we suggest that there are few things better calculated to create a healthy attitude within this medical conglomerate itself than a proposal by organized medicine to bring together on a level of mutual respect and easy communication all of those who participate in the care of the patient. It is an approach that will not only enhance the value of those who have significant roles but will at the same time hasten the identification of efforts that are not productive and ease their removal. And the patient will benefit which, according to last report, is what it's all about. —
D.E.G.



Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.



RENE A. ALONSO, M.D.

Dr. Rene A. Alonso, 58, died October 11, 1979, in Topeka.

Dr. Alonso was born in Havana, Cuba, and had practiced medicine in Topeka since 1962.

Survivors include his wife and two sons.

HAROLD BOWMAN, M.D.

Dr. Harold Bowman, 75, died October 6, 1979, in Wichita.

Dr. Bowman was born in Greenfield, Illinois, and was graduated from Washington University Medical School in 1930. He practiced orthopedic surgery in Wichita from 1948 until his retirement three years ago.

Survivors include his wife, a son, a daughter, and two stepdaughters. Memorial funds have been established with the Salvation Army and with Illinois College, Jacksonville, Illinois.

JOSEPH H. JOHNSON, M.D.

Dr. J. H. Johnson, 80, died September 27, 1979, in El Dorado.

Dr. Johnson was born near El Dorado and was graduated from the University of Arkansas School of Medicine. He had served the El Dorado community as an ear, nose, and throat specialist for more than 50 years.

Survivors include his wife, a son, and two daughters. Memorial contributions may be made to the Dr. J. H. Johnson Memorial Speech Scholarship Fund, Southwestern College, Winfield, or the J. H. Johnson Memorial Scholarship Fund, Butler County College, El Dorado.

EUGENE J. McCREIGHT, M.D.

Dr. E. J. McCreight, 79, died October 10, 1979, in Liberal.

Dr. McCreight was born in Lyndon and was graduated from the University of Kansas School of Medicine in 1925. He practiced medicine in southwest Kansas until his retirement in 1970.

Survivors include his wife, a son, two daughters, a stepson, and two step-daughters. Memorial contributions may be made to the Southwest Medical Center in care of Peoples National Bank, Liberal.

GALEN M. TICE, M.D.

Dr. Galen M. Tice, 80, died September 22, 1979, in Kansas City.

Dr. Tice was born in Sabetha and was graduated from the University of Kansas School of Medicine in 1929. The following year he was named chairman of the University of Kansas School of Medicine Department of Radiology, a post he held until 1965. Dr. Tice wrote extensively in medical literature and was a pioneer of postgraduate education.

Survivors include his wife, a son, and a daughter. Memorial contributions may be made to McPherson College, McPherson, or to Westport Methodist Church, Kansas City.



Tagamet®

brand of

cimetidine

How Supplied:

Pale green 300 mg. tablets
in bottles of 100 and Single Unit Packages of 100
(intended for institutional use only).

Injection, 300 mg./2 ml.,
in single-dose vials
and in 8 ml. multiple-dose vials,
both in packages of 10.

SK&F LAB CO.
a SmithKline company

**When painful spasm
is the presenting
symptom...**



in the functional bowel/irritable bowel syndrome*

Bentyl[®]

(dicyclomine hydrochloride USP)

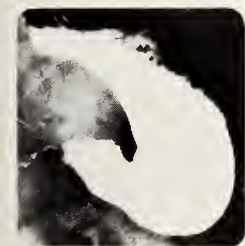
10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

Bentyl[®]

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation

CONTRAINDICATIONS Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. **WARNINGS** In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. **PRECAUTIONS** Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. **ADVERSE REACTIONS** Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention; blurred vision and tachycardia, palpitations, mydriasis; cycloplegia, increased ocular tension; loss of taste; headache, nervousness; drowsiness; weakness, dizziness, insomnia, nausea, vomiting, impotence, suppression of lactation, constipation, bloated feeling, severe allergic reaction or drug idiosyncrasies including anaphylaxis, urticaria and other dermal manifestations, some degree of mental confusion and/or excitement, especially in elderly persons, and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. **DOSEAGE AND ADMINISTRATION** Dosage must be adjusted to individual patient's needs.

Usual Dosage Bentyl 10 mg capsule and syrup. Adults: 1 or 2 capsules or teaspoonfuls syrup three or four times daily. Children: 1 capsule or teaspoonful syrup three or four times daily. Infants: ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg. Adults: 1 tablet three or four times daily. Bentyl Injection. Adults: 2 ml. (20 mg.) every four to six hours intramuscularly only. NOT FOR INTRAVENOUS USE. **MANAGEMENT OF OVERDOSE** The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine[®] (bethanechol chloride USP) should be used.

Product Information as of October, 1978

Injectable dosage forms manufactured by CONNAUGHT LABORATORIES, INC., Swiftwater, Pennsylvania 18370 or TAYLOR PHARMACAL COMPANY, Ocaturo, Illinois 62525 for MERRELL-NATIONAL LABORATORIES, Division of Richardson-Merrell Inc., Cincinnati, Ohio 45215, U.S.A.

Malignant Hypertension

(Continued from page 615)

Answers

1. False
2. False
3. True
4. False
5. True

References

1. Sinclair, R. A.; Antonovych, T. T. and Mostofi, F. K.: Renal proliferative arteriopathies and associated glomerular changes: A light and electron microscopic study. *Hum. Pathol.* 7:565, 1976.
2. Woods, J. W. and Blythe, W. B.: Management of malignant hypertension complicated by renal insufficiency. *N. Engl. J. Med.* 277:57, 1967.
3. Luderer, J. R.; Hayes, A. H.; Dubynslay, O. and Berlin, C. M.: Long-term administration of sodium nitroprusside in childhood. *J. Pediatr.* 91:490, 1977.
4. Mutterperl, R. E.; Diamond, F. B. and Lowenthal, D. T.: Long-term effect of minoxidil in the treatment of malignant hypertension in chronic renal failure. *J. Clin. Pharmacol.* 16:498, 1976.
5. Soghikan, K.: The role of nurse practitioners in hypertensive care. *Clin. Sci. Mol. Med.* 55:345s, 1978.
6. Mroczek, W. J. et al.: The value of aggressive therapy in the hypertensive patient with azotemia. *Circulation* 40:893, 1969.
7. Bacon, B. R. and Ricanati, E. S.: Severe and prolonged renal insufficiency-reversal in a patient with malignant hypertension. *JAMA* 239:1159, 1978.
8. Woods, J. W.; Blythe, W. B. and Huffines, W. D.: Management of malignant hypertension complicated by renal insufficiency: A follow up study. *N. Engl. J. Med.* 291:10, 1974.
9. Beevers, D. G. et al.: Relationship between prognosis and the blood pressure before and during treatment of hypertensive patients. *Clin. Sci. Mol. Med.* 55:333s, 1978.

Buy U.S.
Savings Bonds

Merrell

MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

SERVING YOU IN KANSAS



501 Gage
P.O. Box 399
Topeka, Kansas 66601
913/272-2300

2959 S. Spruce
Wichita, Ks 67216
316-522-8111

9202 Barton
Overland Park, Ks 66214
913-492-5820



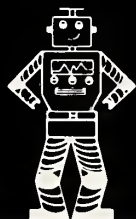
***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; **everything in order — accurately!**

***"Let
MAC
do it"***



Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215
2300 East Lincoln, Wichita, Kansas 67211

• (913)492-8805
• (316)261-5533

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

Librax®

Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br

Please consult complete prescribing information, a summary of which follows:

Indications: Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective: as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis
Final classification of the less-than-effective indications requires further investigation.

Contraindications: Glaucoma; prostatic hypertrophy, benign bladder neck obstruction, hypersensitivity to chlordiazepoxide HCl and/or clidinium Br

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl/Roche) to known addiction-prone individuals or those who might increase dosage, withdrawal symptoms (including convulsions) reported following discontinuation of the drug

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially, increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression, suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment, blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

ROCHE

Roche Products Inc.
Manati, Puerto Rico 00701

In irritable
bowel syndrome*



Adjunctive
Librax[®]

Each capsule contains
5 mg chlordiazepoxide HCl (LIBRIUM[®])
and 2.5 mg clidinium Br (QUARZAN[®]).

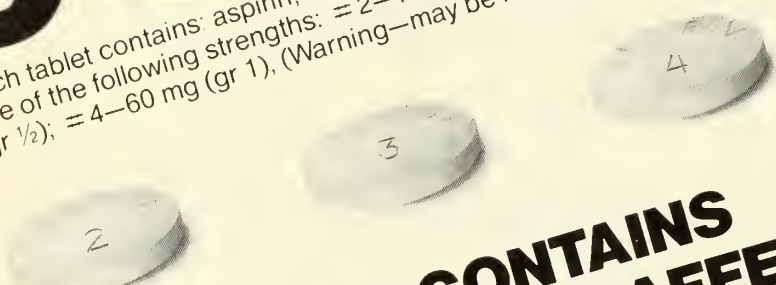
antianxiety/antispasmodic/antimotility

ROCHE

*Librax has been evaluated as possibly effective for this indication.
Please see brief summary of prescribing information on preceding page.

~~EMPIRIN[®]~~ ~~COMPOUND~~ ~~CODEINE~~ IS NOW ~~EMPIRIN[®]~~ ~~CODEINE~~

Each tablet contains: aspirin, 325 mg; plus codeine phosphate in one of the following strengths: = 2-15 mg (gr 1/4); = 3-30 mg (gr 1/2); = 4-60 mg (gr 1), (Warning—may be habit-forming)



**NO LONGER CONTAINS
PHENACETIN OR CAFFEINE.**



Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

The Kansas Medical Society — 1979-1980

OFFICERS

President	Donald D. Goering, Coldwater
Immediate Past President	Warren E. Meyer, Wichita
President-Elect	Phillip A. Godwin, Lawrence
First Vice President	Herman W. Hiesterman, Quinter
Second Vice President	Kermit G. Wedel, Minneapolis
Secretary	Jack R. Cooper, Shawnee Mission
Treasurer	William K. Walker, Sedan
A.M.A. Delegate	Clair C. Conard, Dodge City
A.M.A. Delegate	Alex Scott, Junction City
A.M.A. Alternate	Lew W. Purinton, Wichita
A.M.A. Alternate	Kermit G. Wedel, Minneapolis
Chairman of Editorial Board	David E. Gray, Topeka

COUNCILORS

District 1	Roger D. Warren, Hanover
District 2	Lewis M. Culp, Kansas City
District 3	Lewis G. Allen, Jr., Shawnee Mission
District 4	Rodney Odgers, Pittsburg
District 5	Kenneth M. Boese, Manhattan
District 6	Millard C. Spencer, Topeka
District 7	Marvin Snowbarger, Emporia
District 8	Steven J. Smith, Arkansas City
District 9	Herbert D. Doubek, Belleville
District 10	Herbert Fransen, Newton
District 11	Ivan E. Rhodes, Wichita
District 12	Philip J. Antrim, Anthony
District 13	Wallace N. Weber, Hays
District 14	Donald E. Beahm, Great Bend
District 15	Richard L. Brownrigg, Dodge City
District 16	Floyd L. Smith, Jr., Colby
District 17	Max E. Teare, Garden City
District 18	Robert W. Hughes, Lawrence
District 19	Robert F. Moore, Caney

OFFICERS OF COMPONENT SOCIETIES — 1980

<i>Society</i>	<i>President</i>	<i>Secretary</i>
Allen	George F. DeTar, Iola	Eugene Myers, Iola
Anderson	Thomas M. Dougherty, Garnett	C. B. Harris, Garnett
Atchison	A. K. Tayiem, Atchison	Robert E. Fast, Atchison
Barton	Robert Polson, Great Bend	Perry Schuetz, Great Bend
Bourbon	James J. Burke, Fort Scott	Douglas P. Weddle, Fort Scott
Butler-Greenwood	Louis S. Morgan, Wichita	N. H. Overholser, El Dorado
Central Kansas	Harl G. Stump, Hays	Ward M. Newcomb, Hays
Cherokee	R. M. Chubb, Baxter Springs	Orville A. Mehaffy, Baxter Springs
Clay	Richard H. O'Donnell, Clay Center	Dennis Richards, Clay Center
Cloud	Paul Nelson, Concordia	James Moore, Concordia
Cowley	William H. Farrar, Arkansas City	Jerry Old, Arkansas City
Crawford	Harold James Armstrong, Pittsburg	F. A. Tweet, Pittsburg
Dickinson	Don H. Berkley, Abilene	C. R. Svoboda, Chapman
Douglas	Donald W. Hatton, Lawrence	Michael A. Well, Lawrence
Edwards	W. L. McKim, Kinsley	M. D. Atwood, Kinsley
Flint Hills	James N. Glenn, Emporia	W. Scott Ryan, Emporia
Ford	Howell D. Johnson, Dodge City	M. Amawi, Dodge City
Franklin	R. E. Sutton, Ottawa	Stephen Saylor, Ottawa
Geary	Gary A. Copeland, Junction City	Charles S. Bollman, Junction City
Harvey	Milton A. Claasen, Newton	Wendell J. Wiens, Newton
Iroquois	J. R. Bradley, Greensburg	D. H. Donahoe, Meade
Jackson	J. C. Seeley, Holton	M. R. Moser, Holton
Jefferson	R. R. Snook, McLouth	R. C. Keys, Sr., Winchester
Johnson	William R. Brown, Shawnee Mission	James M. Muehlberger, Shawnee Mission
Labette	M. K. Borklund, Parsons	Daniel Pauls, Parsons
Leavenworth	Carroll D. Voorhees, Leavenworth	M. Zia Anwar, Leavenworth
McPherson	V. C. Price, McPherson	Weir Pierson, McPherson
Marion	Peter Ens, Hillsboro	R. G. Franz, Hillsboro
Miami	R. E. Banks, Paola	J. G. Rowlett, Paola
Mitchell	Martin B. Klenda, Beloit	Carl W. Plowman, Jewell
Northeast Kansas	Gary Sinning, Hiawatha	Tom A. Montgomery, Sabetha
Northwest Kansas	John R. Neuwenschwander, Hoxie	George D. Marshall, Colby
Pawnee	Ole R. Cram, Larned	Thomas D. Ewing, Larned
Pottawatomie	Tom Dechairo, Westmoreland	Tom Walsh, Onaga
Pratt-Kingman	T. L. Waylan, Nashville	Cyril V. Black, Pratt
Reno	James W. Shaw, Jr., Hutchinson	F. L. Depenbusch, Hutchinson
Republic	Duane L. Scott, Belleville	James A. Ward, Belleville
Rice	Curtis V. Wolf, Lyons	Richard A. Siemens, Lyons
Riley	William H. Tiemann, Manhattan	Frank C. Lyons, Manhattan
Saline	David A. Lasley, Salina	C. N. Waters, Salina
Sedgwick	John J. Schlueter, Wichita	Eugene E. Kaufman, Wichita
Seward	Jess W. Koons, Liberal	Jack D. Reese, Liberal
Shawnee	Dan Kelly, Topeka	Stuart C. Averill, Topeka
South Central Tri-County	Walter Forred, Harper	Jerry Hall, Anthony
Southeast Kansas	Don White, Coffeyville	Bob Haskins, Chanute
Southwest Kansas	Myron J. Zeller, Garden City	John Gilbert, Garden City
Stafford	R. P. Quackenbush, St. John	C. Everett Brown, Stafford
Wyandotte	Barbara P. Lukert, Kansas City	Michael D. Boggan, Kansas City

HUAMAN PATHOLOGY LABORATORY TOPEKA KANSAS

Antonio Huaman, M.D., Director

Complete services and consultation for Anatomic, Oncologic, Forensic, and Radioisotopic Pathology and Cytology for physicians' offices and hospitals.

Direct inquiries to:

Antonio Huaman, M.D.
Continental Medical Building, Suite B-20A
631 S.W. Horne Street — P.O. Box 1774
Topeka, KS 66606
Phone (913) 233 3566



Our FULL SERVICE BANKTM offers you more than a checking and savings account. We are medically oriented and offer a full range of services designed just for you, Doctor.

AT CENTRAL BANK & TRUST,
WE'VE GOT IT ALL!

- Leasing • IRA • Lock Box
- KEOGH (HR10)
- Safe Deposit Boxes
- Money Market Certificates
- Certificates of Deposits
- Trust Department
- International Banking
- And More...

C CENTRAL
BANK
& TRUST

Main Bank / 3433 E. Central • Central Two
First and Hilda • Central Northwest
21st and Amidon • All locations: 316-686-7111
Wichita, Kansas 67201 • Member F.D.I.C.

COLLECT NOW TO BEAT WINTER ENERGY CRUNCH

With the consumer debt climbing to new all-time highs and fuel costs for both homes and automobiles threatening to take a bigger than ever bite out of household budgets this winter, now is the time for creditors to clear their books of uncollected receivables.

Past-due bills will not become any easier to collect as the economy and personal finances weaken. And, when faced with a choice between paying the heating bill or an already delinquent account, most overextended consumers will opt for the former.

To secure the money due them, creditors are advised to keep a fixed eye on their receivables throughout the coming months. I. C. System recommends that members using their association-approved collection service submit any currently outstanding accounts at once and turn over subsequent delinquencies as soon as they become sixty days past due.

A sound collection procedure at any time, this practice assumes added importance in view of the predicted downslide. Creditors who act on delinquencies promptly stand the best chance of recovering their money before winter sets in and tightens its availability.

THE UNIVERSITY OF KANSAS COLLEGE OF HEALTH SCIENCES AND HOSPITAL

DIVISION OF HEALTH CARE OUTREACH AND CONTINUING EDUCATION

OUTREACH PROGRAM.

1979-80 ORTHOPEDIC PROBLEMS SEMINARS

BELLEVILLE — Republic County Hospital
December 13, 1979 and May 29, 1980

PHILLIPSBURG — Phillips County Hospital
December 14, 1979 and May 30, 1980

GREAT BEND — Central Kansas Medical Center
December 15, 1979 and May 31, 1980

CHANUTE — Neosho County Memorial Hospital
January 18, 1980 and June 6, 1980

PITTSBURG — Mt. Carmel Hospital
January 19, 1980 and June 7, 1980

GARDEN CITY — St. Catherine's Hospital
January 23, 1980 and June 11, 1980

Content: Orthopedic diagnosis, treatment, and related sciences are discussed in informal case-centered sessions.

Registration Fee: \$15.00 per session.

Accreditation:

American Medical Association: 3 hours of Category 1 for each session.

American Academy of Family Physicians: 3 hours Prescribed C. E. Credit for each session.

**For program announcements and information, write: DIVISION OF CONTINUING EDUCATION,
The University of Kansas College of Health Sciences and Hospital, Kansas City, Kansas 66103**

Guardian Angels



Short and quick!

Save precious time and lives with the LIFE WATCH helicopter air ambulance that can be on its way to an emergency up to 125 miles away in just three minutes. It can accommodate two patients and a minimum of two skilled medical personnel who maintain direct physician communication. Complete life support equipment is also on board.

Cruising at 120 mph, this helicopter travels more than twice as fast as legal highway speeds. And, of course, it travels in a straight line, without having to follow the zig-zag highway route ... saving even more time.

The LIFE WATCH helicopter from Midwest Piper Flight. Count on it!

Far and fast!

Speeds up to 400 mph dramatically cut travel time to specialized medical facilities. The recent addition of a Cessna Citation jet gives Midwest Piper Flight's ambulance fleet the ability to expand its service nationwide. And a Beech King Air propjet puts almost the whole state of Kansas within an hour's flight of specialized hospital facilities.

The long and short of it is ... Midwest Piper Flight has the air ambulance to meet your needs. Close by and quick ... or far and fast!

Contact your physician, hospital, law enforcement agency or EMS for emergency air ambulance support. For non-emergency air ambulance information, call (316) 682-5551.



Beech King Air



Cessna Citation

This advertisement is paid for by Midwest Piper Flight.

MIDWEST PIPER FLIGHT INC.

Comotara Airport
3512 N. Webb Road
P.O. Box 8067, Wichita, KS 67208
Phone (316) 682-5551



Personalities —IN KANSAS MEDICINE

Daniel K. Roberts, Wichita, addressed a nursing education program in Harper. This was one of the on-going series of the Mobile Inservice Education Program for nurses and health professionals in rural hospitals within a 100-mile radius of Wichita.

Joseph L. Kyner, Kansas City, discussed diabetes research at a meeting of the Topeka chapter of the American Diabetes Association.

Carl W. Plowman, Jewell, was honored for 50 years of service to his community.

Earl Gehrt, Chanute, was featured speaker at a meeting of the Neosho County Division of the Kansas Chapter, Arthritis Foundation.

Raymond Lumb and **John Lynch** each conducted a session during a six-part class for Shawnee County arthritics.

Robert J. Dockhorn, Shawnee Mission, discussed medicated food allergy at the annual meeting of the American Academy of Pediatrics.

John W. Long, Topeka, discussed aspects of cardiac surgery at a meeting of Topeka Chapter of Mended Hearts.

Chester Lessenden, Topeka, discussed skin cancer at a recent meeting of the Kansas State Nurses Association, District I.

William J. Madden II, Lincoln, was honored by the Lincoln County community. He is retiring from practice for health reasons.

Varden Loganbill, Moundridge, urged those attending a Hesston Kiwanis Club meeting to utilize a common-sense program for health maintenance.

Thomas F. Rosenberg, Wichita, spoke on "Problems of Child Abuse" at a meeting in Kingman.

Ronald Hunninghake was guest speaker at a meeting of the Minneapolis Lions Club.

Neonilo Tejano, Halstead, discussed shoulder injuries at a Sports Injuries Seminar in Hesston. He also discussed "Total Shoulder Replacement" at the annual meeting of the Kansas Orthopedic Society.

Hugo P. Weber, Wichita, lectured on "Practical Approaches to the Use of Intravenous Fluids and Electrolytes" at a recent session of the Fourth Annual Harper Seminar Series. The series provides continuing education for area health professionals.

Edward Greenwood, Topeka, spoke on retirement planning to members of the Topeka Retired Teachers Association. The title of his talk was "What Happened to Us?"

A. J. Aillon and **J. W. Welch**, Halstead, attended a conference in Wichita on peripheral arterial vascular disease.

Adults for Infant Development (AID) in Winfield sponsored a talk on the problems of handicapped children by **Richard C. Gilmartin**, Wichita. The talk was primarily for parents of handicapped children, but was open to all interested persons.

John W. Travis, Topeka, has been elected president of the American Society of Therapeutic Radiologists.

Jack Wortman, Hutchinson, was graduation speaker at the McPherson Center School of Practical Nursing.

Charles Stephens, Minneola, was recently honored for 20 years of service to the Minneola/Bloom community.

Leo P. Cawley, Wichita, was guest speaker at a recent meeting of the Lupus Foundation of Kansas, Wichita Chapter. He was presented with a grant for lupus research.

Francis W. Masters, Kansas City, has been installed as president of the American Society of Plastic and Reconstructive Surgeons.

John Lynch, Topeka, discussed "Joint Replacement" during the third session of arthritis group education classes sponsored by the Kansas Chapter of the Arthritis Foundation and the Pilot Club of Topeka.

LaDonna Regier, Colby, delivered the pinning ceremony address for the graduating 1978-79 class of practical nurse education at Colby Community College.

William C. Weir, Erie, who recently retired, was honored for his many years of service to his community.

The Department of Energy (DOE) has exempted physician offices from temperature restriction requirements (78F summer; 65F winter).

The regulations place temporary restrictions on temperature settings for heating, cooling, and hot water in commercial, industrial, and other non-residential buildings. Under previously proposed rules, DOE had neglected to exempt physician offices, a position strenuously objected to by the AMA.

The final rules provide an exemption for buildings (or portions thereof) "where maintenance of certain temperature levels is required . . . to protect the health of persons in offices of physicians, dentists, and other members of (licensed) health care professions. . . ."

Generics save money. Big money!

The FTC estimates that \$400 million could be saved annually on the nation's Rx bill if physicians prescribed generics. Are you saving *your* patients extra dollars?

Purepac, America's leading manufacturer of a national brand of generics, would like to show you the tremendous savings possible with just three of our 700 generic products:

DRUG		AVERAGE RX PRICE (100's)	\$ SAVINGS WITH PUREPAC	% SAVINGS WITH PUREPAC
Pavabid Capsules*	150 mg.	\$10.32		
Purepac Papaverine	150 mg.	3.95	\$6.37	61.7%
Equanil Tablets*	400 mg.	8.15		
Purepac Meprobamate	400 mg.	1.85	6.30	77.3%
Librium Capsules*	10 mg.	8.76		
Purepac Chlordiazepoxide HCl.	10 mg.	3.90	4.86	55.4%

*Registered trademarks of Marion Labs., Wyeth Labs., Roche Labs., respectively.

Purepac generics save money. Big money. Purepac is dedicated to providing your patients with quality products that are equivalent to their brand name counterparts at significant savings.

But we can't do it alone. We need your cooperation.

Send for Purepac's *free* Brand Name/Generic Name Reference Chart today. You'll receive an alphabetical listing of brand name drugs with their generic counterparts.

And next time you write a prescription, write for Purepac brand generics. Your patients will know you care.

PUREPAC. Competitive prices and peace of mind.

FREE!

Please send me my FREE copy of Purepac's Brand Name/Generic Name Chart.

Name _____

Address _____

City _____ State _____ Zip _____

Mail to Purepac Pharmaceutical Co.,
200 Elmora Avenue, Elizabeth, N.J. 07207

KM1179



PUREPAC

Elizabeth, NJ 07207

THE LEADING NATIONAL BRAND OF GENERICS

INDEX TO ADVERTISERS

Allen County Aviation, Inc.	588
Blue Shield of Kansas	590
Burroughs Wellcome Company	624b, 632
Capitol Federal Savings & Loan Ass'n	591
Central Bank & Trust	626
Goetze-Niemer Company	591
P. W. Hanicke Manufacturing Company	588
Huaman Pathology Laboratory	626
Kansas Gold & Silver Exchange	632
Kansas Society of Certified Public Accountants	596
Lattimore-Fink Laboratories	592
Eli Lilly and Company	587
Medical Protective Company	592
Merck Sharp & Dohme	592d
Merrell-National Laboratories ..	588, 588a, 620b, 621, 622
Mid-America Computing	623
Midwest Piper Flight Inc.	628
Munns Medical Supply Company	623
Purepac Pharmaceutical Co.	631
Roche Laboratories	586, 624, 624a, C3, C4
Smith Kline Diagnostics	588b
Smith Kline & French	620a
The Upjohn Company	592a, 592b, 592c, 592d
Wyeth Laboratories	594, 595

WANTED: Director of Community Health, City of Wichita. Must possess or be eligible for Kansas licensure to practice medicine. Base salary \$24,921-\$57,307 plus exceptional fringe benefits package. Inquiries and detailed resume to: Tim M. Kohl, Personnel Director, City of Wichita, City Hall, 455 No. Main, 2nd Floor, Wichita, KS 67202. Phone 316-268-4531.

HLA TESTING for disease association studies; HLA B-27, HLA B-8, etc. Available from the Midwest Organ Bank Laboratories. For information call 816-931-6353 or contact Midwest Organ Bank Laboratories, 305 W. 43rd St., Kansas City, MO 64111.

FOR SALE: Mimeograph machine in good working order. Also sound-scriber equipment — 2 recorders, 1 transcriber, working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

GREAT BEND — EMERGENCY MEDICINE PRACTICE available July 1, Mon-Thurs evenings, 5 PM-5 AM. Paid professional liability insurance, excellent specialty back-up, modern hospital, guaranteed annual income, \$50,000. Contact Tom Cooper, M.D., 1-800-325-3982.

FAMILY PHYSICIAN wanted to associate with young practitioner in one year old practice in central Nebraska. Prefer A.B.F.P. Sixty bed hospital adjacent to new office building in rural community of 6,000. Full hospital privileges. Good schools, recreation nearby. Contact Michael L. Westcott, M.D., A.B.F.P., 1315 Tibbals St., Holdrege, NE 68949, 308/995-6111.



**The Krugerrand.
The world's best way
to buy gold is here.**

Bank it, hide it, or add it to your Keogh Plan. Phone your order direct or have your Keogh manager call us.

KANSAS GOLD & SILVER EXCHANGE

(316) 792-3422

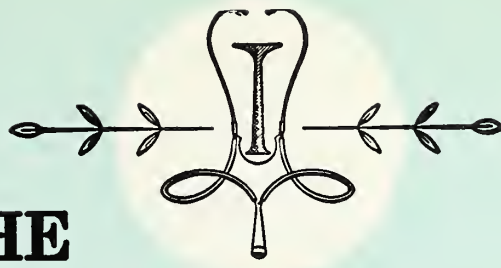
Remember

ZYLOPRIM®
the original (allopurinol)
100 and 300 mg
Scored Tablets

*The name
Zyloprim
is now
imprinted on
each tablet.*



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709



THE
Journal

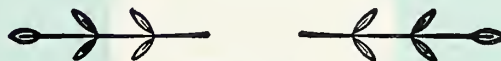
LIBRARY
U.C. SAN FRANCISCO

DEC 21 1979

OF THE

Kansas
Medical
Society

DECEMBER
1979



(ISSN 0022-8699)

VOL. LXXX
NO. XII

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for December

Scientific Articles

- A Neglected Modality: Local Anesthesia for Carotid Occlusive Disease — Joseph E. Bosiljevac, M.D. and S. Jim Farha, M.D., Wichita 641
- Vaginal Voiding: Its Significance in Children — C. H. Hsu, M.D., Topeka 646
- Iron Balance: Variations Between Men and Women — G. Thomas, M.T. and B. Viswanathan, M.D., Topeka 647

Current Comment

- Inheritance of Common Disease — William Horton, M.D., Kansas City, Kansas 649

Miscellaneous

- Advertisers 664
- Auxiliary News 637
- Classified Advertisements 664
- Editorial Comment: *Another Epistle* 654
- Impaired Physician Program Resource List 633
- In Memoriam 640
- Index to Volume LXXX 657
- Information for Authors 636
- President's Message 653

Address all correspondence to the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612; 913-235-2383. Manuscripts should be submitted to the Managing Editor. Refer to "Information for Authors" for details.

Editor: David E. Gray, M.D., 1300 Topeka Avenue, Topeka 66612.

Editorial Board: David E. Gray, M.D., Editor; Richard H. Greer, M.D., Topeka; M. Martin Halley, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Robert T. Manning, M.D., Wichita.

Editorial Consultant: Orville R. Clark, M.D., St. Petersburg, FL.

Managing Editor and Advertising Manager: Val Braun, M.P.A.; Editorial Assistant: Eleanor Bell, 1300 Topeka Avenue, Topeka 66612.

Business Manager: Jeremy Slaughter, 1300 Topeka Avenue, Topeka 66612.

Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, the JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

THE JOURNAL is published monthly by the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612. A year's subscription is included in membership in the Kansas Medical Society, with \$10.00 of each member's dues apportioned to the JOURNAL. Rates to others, except in foreign countries, \$10.00 per year; single copies \$1.50; rosters \$10.00. Printed by The Ovid Bell Press, Inc., Fulton, Missouri. Second-class postage paid at Topeka, Kansas, and at additional mailing offices. POSTMASTER: Send address changes to Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.

RESOURCE FOR PHYSICIANS IN TROUBLE

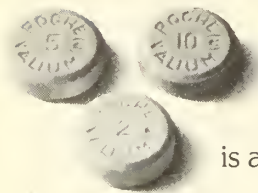
The Kansas Medical Society Impaired Physicians Program is now operational. If you desire more information concerning this program, if you know an impaired colleague who needs help, or if you are concerned about yourself or your spouse, please contact one of the Committee members nearest you, as listed below, or the KMS Executive Office. All such contacts will be held in strictest confidence and the caller need not reveal his name, if he/she so desires.

Alcoholism, other drug abuse, and medical/neurological/psychological problems are potentially treatable conditions. All impaired physicians should be encouraged to seek help at the earliest possible time in order to retain or regain full effectiveness to practice medicine. Please contact one of the following:

John Cody, M.D., Hays (913) 625-7049
H. Ivor Jones, M.D., Shawnee Mission .. (913) 362-4040
Roy Neil, M.D., Hays (913) 628-3215
George M. Penn, M.D., Topeka (913) 234-9566
Ivan Rhodes, M.D., Wichita (316) 685-1291
Alex Scott, M.D., Junction City (913) 238-2518
Max Teare, M.D., Garden City (316) 276-7689
Virginia L. Tucker, M.D., Lawrence(913) 843-3750
Kermit Wedel, M.D., Minneapolis (913) 392-2144

Kansas Medical Society, Topeka (913) 235-2383/235-3619

A character all its own.



Valium (diazepam/Roche) is a benzodiazepine with a character all its own.

Pharmacologically, it is a potent skeletal muscle relaxant and anticonvulsant (in adjunctive use), as well as an antianxiety agent. Pharmacokinetically, only Valium provides active *diazepam* as well as the active metabolites 3-hydroxydiazepam, desmethyldiazepam and oxazepam.

But the individual character of Valium is even more apparent clinically than pharmacokinetically. And far more significant. That's because of the patient response obtained with Valium. A response which brings a calmer frame of mind. A response which has a pronounced effect on the somatic symptoms of anxiety, particularly muscular tension. A response which helps the patient feel more like himself again because of the way Valium reduces the overwhelming symptoms of anxiety and psychic tension.

Another important aspect of the clinical character of Valium is safety. Though drowsiness, ataxia and fatigue are possible, these and more serious side effects are rarely a problem. Of course, as with all CNS-acting drugs, patients taking Valium should be cautioned against driving, operating dangerous machinery or the simultaneous ingestion of alcohol.

Unquestionably, many psychotherapeutic agents, including other benzodiazepines, have antianxiety effects. But one fact remains: you get a certain kind of patient response with Valium. It's a response you want. A response you know. A response you trust as part of your overall management of anxiety and psychic tension.

Valium®^{IV} diazepam/Roche

2-mg, 5-mg, 10-mg scored tablets
a prudent choice in psychic
tension and anxiety

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

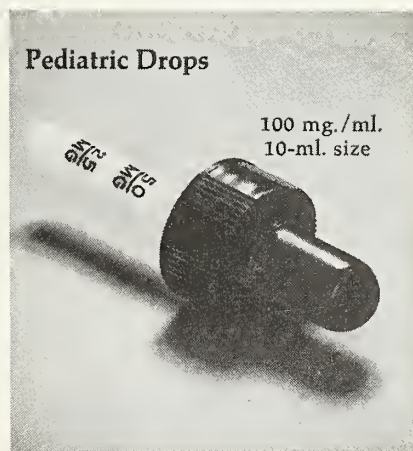
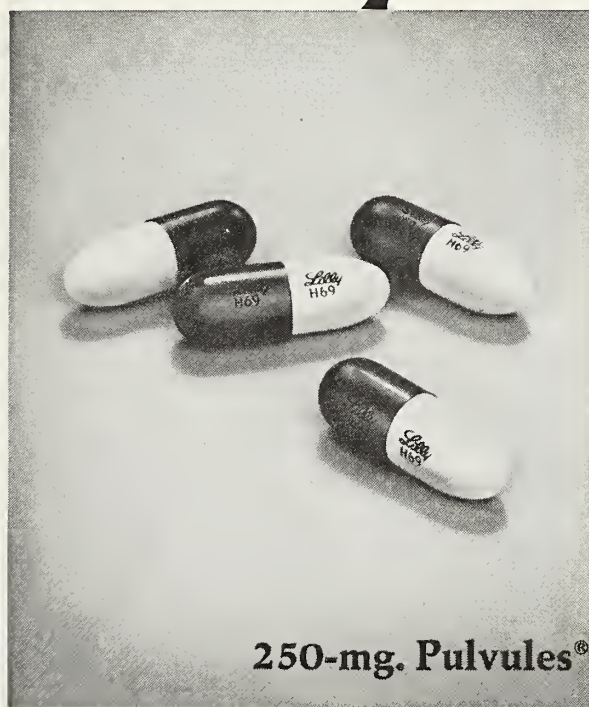
Dosage: Individualize for maximum beneficial effect. **Adults:** Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available singly and in trays of 10.



Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

easy to take



Keflex®

cephalexin



500738

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206

Winter Traveling Medical Education Courses

presented by

Kansas City Southwest Clinical Society

***You, Your Spouse, and Your Friends Are
Cordially Invited to Join Us for a Week
in the Sun . . . In the Middle of Winter***

* * *

MEDICAL SEMINAR AT SEA

February 2-9, 1980

Aboard the luxurious M/S Starward offering every convenience and innovation for your cruising pleasure.

Leaving Miami and calling at Port Antonio, Jamaica; Port au Prince, Haiti; Nassau and a private Outer Island in the Bahamas.

Physicians' Program: 21 Hours of AMA Category 1 credit.

Spouses' Program: Specifically designed for her/him.

* * *

MAUI, HAWAII

February 23 - March 1, 1980

In the Royal Lahaina Hotel located directly on Kaanapali's inviting white sand beach and boasting every facility for your pleasure.

Optional Extension Arrangements to Honolulu available.

Physicians' Program: 16 Hours of AMA Category 1 credit.

Please send program brochure:

- ☐ Medical Seminar at Sea
Deadline for Reservations: Dec. 14, 1979
- ☐ Maui, Hawaii
Deadline for Reservations: Jan. 18, 1980

Name

Address

City

State

Zip

**Mail to: K. C. Southwest Clinical Society
2220 Holmes
Kansas City, Mo. 64108**

Phone: 816/471-3876

Information for Authors

Manuscript Preparation

Manuscripts must be typewritten, double spaced, leaving wide margins. Submit the original, plus one copy if possible.

Titles should be short, specific, and amenable to indexing. A subtitle is frequently used to keep the main title short.

Summary: All manuscripts should include a short abstract which is a factual (not descriptive) summary of the work.

Author Responsibility: The author is responsible for all statements made in his work, including changes made by the copy editor. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication. Publication elsewhere will be subsequently authorized at the discretion of the Editor.

Galley Proof: To make extensive changes in the article after the text has been set in type may require an additional cost which exceeds the original. The galley proof is for correction of ERRORS, and a rewriting of the article should be done on the original copy BEFORE it is submitted for publication.

Drugs should be called by their generic names; the trade names can be added in parentheses if they are considered important. All *units of measure* must be given in the metric system.

References

Bibliographic references should not exceed 20 in number, documenting key publications. Personal communications and unpublished data should not be included. References should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively and all must be cited in the text. Use the style of the AMA publications, giving: name of author, title of article, name of periodical, volume, pages, year.

Illustrations

All material which cannot be set in type, such as photographs, line drawings, graphs, charts, tracings (for preparation of tables, see below) must be mounted on white cardboard. All must be identified on the back as to figure number, author's name, and an arrow indicating top. Legends should be typed double spaced on a separate sheet of paper, limited to a maximum of 30 words.

Drawings and Graphs should be done professionally in India ink on illustration board or high grade white drawing paper.

Photographic material should be submitted in duplicate as high contrast, glossy prints. Color illustrations will be accepted for publication only if the author assumes the cost.

THE JOURNAL will assume the cost of B/W engravings and cuts up to \$35 (or 5 cuts). Engraving cost for illustrations in excess of \$35 will be billed to the author.

Tables

Because tables are set by hand, their cost is comparable to illustrations. A reasonable number of tables are allowed without cost to the author.

Tables should be self-explanatory and should supplement, not duplicate, the text. Since the purpose of a table is to compare or classify related items, the data must be logically and clearly organized. The relationship and comparison are established by the correct choice of column heads (captions of vertical columns) and stubs (left entries in horizontal listings).

Each table should be typed double spaced, including all headings, on separate sheets of lettersize paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively. Each table must have a title.

Reprints

A reprint order form with a table covering cost will be sent with the galley proof to each contributor. Since the JOURNAL has no way to provide for reprints, they must be ordered by the author and purchased directly from the printer.

In therapy of skin and skin structure infections
due to susceptible strains of staphylococci and/or streptococci...

THE FIRST ORAL CEPHALOSPORIN THAT WORKS NIGHT AND DAY ON A SINGLE DOSE



DURICEF[®]

(CEFADROXIL MONOHYDRATE)

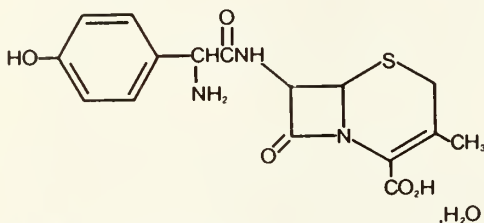
DURICEF[®]

(CEFADROXIL MONOHYDRATE)

References:

1. Data on file, Mead Johnson Pharmaceutical Division.
2. Gotley MS. To be taken as directed. *J Roy Coll Gen Pract* 16:39, 1968.

DESCRIPTION: DURICEF[®] (cefadroxil monohydrate) is a semisynthetic cephalosporin antibiotic intended for oral administration. It is a white to yellowish-white crystalline powder. It is soluble in water and it is acid-stable. It is chemically designated as 7-[[[D-2-amino-2-(4-hydroxyphenyl)acetyl]amino]-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid monohydrate. It has the following structural formula:



Clinical Pharmacology—DURICEF (cefadroxil monohydrate) is rapidly absorbed after oral administration. Following single doses of 500 and 1000 mg., average peak serum concentrations were approximately 16 and 28 mcg./ml., respectively. Measurable levels were present 12 hours after administration. Over 90 percent of the drug is excreted unchanged in the urine within eight hours. Peak urine concentrations are approximately 1800 mcg./ml. during the period following a single 500 mg. oral dose. Increases in dosage generally produce a proportionate increase in DURICEF urinary concentration. The urine antibiotic concentration, following a 1 gm. dose, was maintained well above the MIC of susceptible urinary pathogens for 20 to 22 hours.

MICROBIOLOGY: *In vitro* tests demonstrate that the cephalosporins are bactericidal because of their inhibition of cell-wall synthesis. DURICEF is active against the following organisms *in vitro*:

Beta-hemolytic streptococci
Staphylococci, including coagulase-positive, coagulase-negative, and penicillinase-producing strains
Streptococcus (Diplococcus) pneumoniae
Escherichia coli
Proteus mirabilis
Klebsiella species

Note—Most strains of *Enterococci* (*Streptococcus faecalis* and *S. faecium*) are resistant to DURICEF. It is not active against most strains of *Enterobacter* species, *P. morganii*, and *P. vulgaris*. It has no activity against *Pseudomonas* or *Herella* species.

Disc Susceptibility Tests—Quantitative methods that require measurement of zone diameters give the most precise estimates of antibiotic susceptibility. One recommended procedure (CFR Section 460.1) uses cephalosporin class disc for testing susceptibility; interpretations correlate zone diameters of the disc test with MIC values for DURICEF. With this procedure, a report from the laboratory of "resistant" indicates that the infecting organism is not likely to respond to therapy. A report of "intermediate susceptibility" suggests that the organism would be susceptible if the infection is confined to the urinary tract, as DURICEF produces high antibiotic levels in the urine.

INDICATIONS: DURICEF (cefadroxil monohydrate) is indicated for the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Urinary tract infections caused by *E. coli*, *P. mirabilis*, and *Klebsiella* species
 Skin and skin structure infections caused by staphylococci and/or streptococci

Note—Culture and susceptibility tests should be initiated prior to and during therapy. Renal function studies should be performed when indicated.

CONTRAINDICATION: DURICEF (cefadroxil monohydrate) is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

WARNING: IN PENICILLIN-ALLERGIC PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE USED WITH GREAT CAUTION. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES OF PATIENTS WHO HAVE HAD REACTIONS TO BOTH DRUGS (INCLUDING FATAL ANAPHYLAXIS AFTER PARENTERAL USE.)

Any patient who has demonstrated a history of some form of allergy, particularly to drugs, should receive antibiotics cautiously and then only when absolutely necessary. No exception should be made with regard to DURICEF (cefadroxil monohydrate).

PRECAUTIONS: Patients should be followed carefully so that any side-effects or unusual manifestations of drug idiosyncrasy may be detected. If a hypersensitivity reaction occurs, the drug should be discontinued and the patient treated with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

DURICEF (cefadroxil monohydrate) should be used with caution in the presence of markedly impaired renal function (creatinine clearance rate of less than 50 ml/min/1.73M²). (See Dosage and Administration.) In patients with known or suspected renal impairment, careful clinical observation and appropriate laboratory studies should be made prior to and during therapy.

Prolonged use of DURICEF may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

USAGE IN PREGNANCY: Although no teratogenic or anti-fertility effects were seen in reproductive studies in mice and rats receiving dosages greater than the normal human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

ADVERSE REACTIONS: Gastrointestinal—The most frequent side-effect has been nausea. It was infrequently severe enough to warrant cessation of therapy. Administration with food decreases nausea and does not decrease absorption. Diarrhea and dysuria have also occurred.

Hypersensitivity—Allergies (in the form of rash, urticaria, and angioedema) have been observed. These reactions usually subsided upon discontinuation of the drug.

Other reactions have included genital pruritus, genital moniliasis, vaginitis, and moderate transient neutropenia.

DOSAGE AND ADMINISTRATION: DURICEF (cefadroxil monohydrate) is acid stable and may be administered orally without regard to meals. Administration with food may be helpful in diminishing potential gastrointestinal complaints occasionally associated with oral cephalosporin therapy.

Adults—For urinary tract infections the usual adult dosage is one gm. (two 500 mg. capsules) two times per day. For skin and skin structure infections the usual dose is 500 mg. two times per day or 1 gm. once a day.

In patients with renal impairment, the dosage of cefadroxil should be adjusted according to creatinine clearance rates to prevent drug accumulation. The following schedule is suggested. In adults, the initial dose is 1 gm. of DURICEF (cefadroxil monohydrate) and the maintenance dose (based on the creatinine clearance rate [ml/min/1.73M²]) is 500 mg. at the time intervals listed below.

Creatinine Clearances	Dosage Interval
0-10 ml/min	36 hours
10-25 ml/min	24 hours
25-50 ml/min	12 hours

Patients with creatinine clearance rates over 50 ml/min may be treated as if they were patients having normal renal function.

Children—Dosage and safety have not yet been established in children.

HOW SUPPLIED: DURICEF[®] (cefadroxil monohydrate) capsules 500 mg. for oral administration in an opaque maroon cap and opaque white body No. 0 hard gelatin capsule. On each half capsule printed in black is "MJ" and "500." Available in bottles of 24 capsules (NDC 0087-0784-41) and 100 capsules (NDC 0087-0784-42).

U.S. Patent Re. 29,164

Mead Johnson

PHARMACEUTICAL DIVISION
 Mead Johnson & Company
 Evansville, Indiana 47721



American Medical Association Auxiliary
535 N. Dearborn St., Chicago, IL 60610

Auxiliary News

The Auxiliary Leadership Conference was held in Chicago in October.

One of the pleasant duties of this position is the opportunity to visit the Auxiliary county chapters. Our travels began in September when we visited with the Harvey County Auxiliary (Mrs. Richard Glover, president). This chapter began their year on a positive note, voting to build a Learning Center on Body Pollution. In early October, I visited the Shawnee County Auxiliary (Mrs. Richard Polly, president). With her enthusiastic leadership, they will accomplish many goals.

Also in October, Evelyn Huff and I visited the Franklin County Auxiliary in Ottawa. Our state second Vice-President, Mrs. David Laury, doubles as her county's president. We are very proud of Franklin and hold it up as an example to other small auxiliaries, as they boast 100 per cent membership! That same day, Evelyn and I traveled on to Northeast counties, this month meeting in Horton. Their membership encompasses many towns and includes varied projects, such as international health and AMAERF. We are grateful for all they do in these areas.

November is a beautiful month in which to travel — and travel we did! Our series of visitations began in Great Bend. The Barton County Auxiliary is led by Mrs. Joseph Gateno, and also boasts the membership of Mrs. Clair Cavanaugh, the 1979-80 North

Central Regional Vice-President for AMAERF. We met with Douglas County Auxiliary for a morning meeting in Lawrence (Mrs. Charles Loveland, president). The following day we visited the Flint Hills District Auxiliary which meets in Emporia (Mrs. James Geitz, president). This Auxiliary works hard to maintain a nurses' loan fund; this year their goal is to raise \$1,000 for this project. They also report that 16 people have completed the child care course.

We praise the members of the Northwest Counties Auxiliary for making the effort they do to have an active Auxiliary, as they come from distances as great as 100 miles. They always make it a point to meet when the circuit course is in Colby, and it was there we met with Mrs. Floyd Smith, who is their president this year. They hope to begin working on some much needed projects for international health. Our last stop on this four-day visitation was in Hays. This Central Kansas Auxiliary is chaired by Mrs. Robert Cox. They are considering building a Learning Center as their main project this year.

It has been a busy, but very interesting two months, listening to the enthusiasm of the county auxiliaries and answering their questions concerning our state and national concerns. Doctor, please continue to support your spouse in Auxiliary participation; we are an exclusive organization with the potential for showing our communities that we are concerned and active in the betterment of health for everyone.

Sincerely,
Kathy Wedel
President
Kansas Medical Society Auxiliary

Supplying the medical needs of Kansas....

501 Gage
P.O. Box 123
Topeka, Ks 66601
913/272-2300



1635 East 37th St. No.
Wichita, Ks 67219
316/832-1447



9202 Barton
Overland Park, Ks 66214
913/492-5820



***INCREASE YOUR REVENUES,
CUT YOUR EXPENSES, BOOST
YOUR EFFICIENCY . . . with***

MID-AMERICA COMPUTING'S

SINGLE CHARGE TICKET

With the Charge Ticket, our computer prepares statements, insurance claims, Y-T-D patient history records, cash control, delinquent accounts control, payment distribution, automatic aging, detailed trial balance, services performed and income received; **everything in order — accurately!**

***"Let
MAC
do it"***

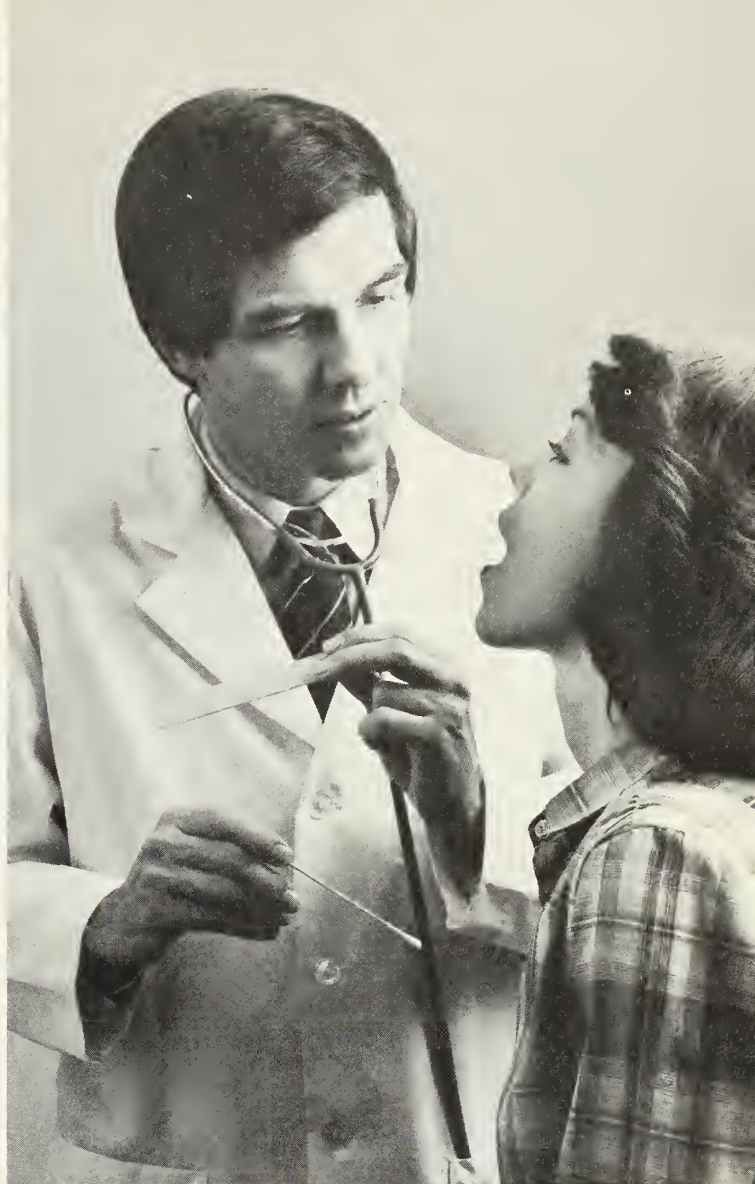
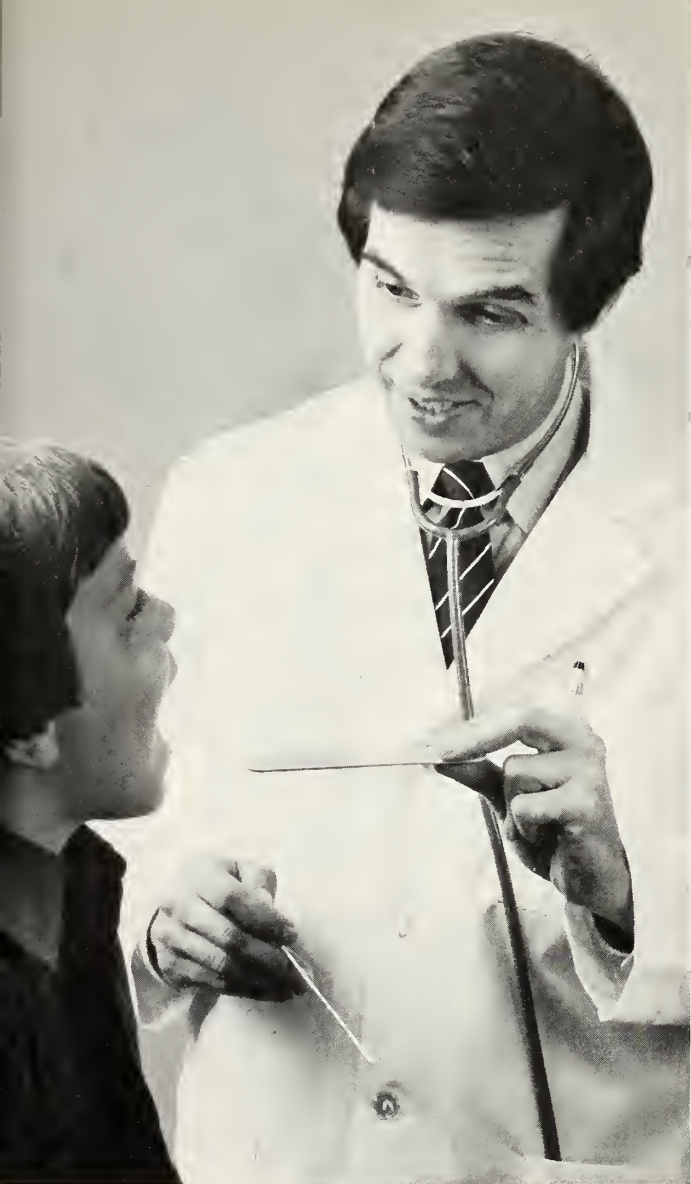


Serving over 150 Professional Clients

Mid-America Computing, Inc.

12345 West 95th Street, Shawnee Mission, Kansas 66215
2300 East Lincoln, Wichita, Kansas 67211

• (913)492-8805
• (316)261-5533



IS IT STREP?

Isocult® answers on the spot.

in-office diagnostic culturing system

- identifies beta-hemolytic streptococci in 24-48 hours
- provides a convenient method of testing for cure
- detects carriers in patient's family
- simple, reliable, efficient

Isocult® culture tests also available for:

- Bacteriuria
- Neisseria gonorrhoeae
- Candida (Manilia)
- Combination N. gonorrhoeae/Candida
- Trichomonas vaginalis
- Combination T. vaginalis/Candida
- Staphylococcus aureus
- Pseudomonas aeruginosa

Send to:
SmithKline Diagnostics
880 West Maude Avenue
P.O. Box 61947
Sunnyvale, CA 94086

Please send me additional information on the Isocult®
In-Office Diagnostic Culturing System

Name _____

Medical Specialty _____

Address _____

City _____ State _____ Zip _____

Telephone _____

SKD
a SmithKline company

©SmithKline Diagnostics, 1979

SmithKline Diagnostics

880 West Maude Avenue • P.O. Box 61947 • Sunnyvale, CA 94086

IN MEMORIAM

Pauline Farrell

Pauline Farrell died November 10, 1979.

Pauline came to the *Journal of the Kansas Medical Society* in 1942 as managing editor where she established a firm grip on the hearts and minds of the members of the Editorial Board — as well as many others since her duties (even as now) extended far beyond the implications of that title. In 1959, she went to the Kansas University Medical Center as assistant registrar, then moved to the Regional Medical Program at its inception, remaining there until its termination — and her retirement.

In the process, she developed a broad acquaintance with the physicians of Kansas (and beyond) and was known to exemplify the best of the administrative structure of medical service in the state. She was a capable and gracious lady, and we could ill-afford to lose her.



**The Krugerrand.
The world's best way
to buy gold is here.**

Bank it, hide it, or add it to your Keogh Plan. Phone your order direct or have your Keogh manager call us.

KANSAS GOLD & SILVER EXCHANGE
(316) 792-3422

ALDORIL®
containing methyl/dopa and hydrochlorothiazide

TABLETS

ALDORIL® -25

containing 250 mg ALDOMET® (Methyldopa, MSD)
and 25 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL® -15

containing 250 mg ALDOMET® (Methyldopa, MSD)
and 15 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

TABLETS

ALDORIL® D30

containing 500 mg ALDOMET® (Methyldopa, MSD)
and 30 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

TABLETS

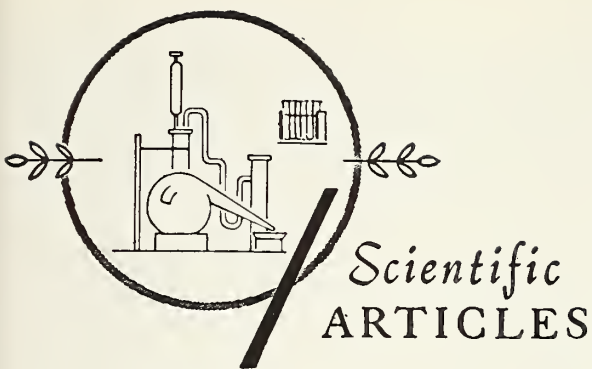
ALDORIL® D50

containing 500 mg ALDOMET® (Methyldopa, MSD)
and 50 mg HydroDIURIL® (Hydrochlorothiazide, MSD)

Merck Sharp & Dohme, Division of
Merck & Co., Inc., West Point, PA 19486

Copyright © 1979 by Merck & Co. Inc.

MSD
MERCK
SHARP
DOHME
J9AR13



A Neglected Modality

Local Anesthesia for Carotid Occlusive Disease

JOSEPH E. BOSILJEVAC, M.D.* and
S. JIM FARHA, M.D.,† *Wichita*

SURGICAL TREATMENT of cerebral transient ischemic attacks has become well established.¹⁻³ Various anesthetic and monitoring techniques have been used to protect cerebral function during carotid artery surgery. Most large centers report satisfactory results using general anesthesia, routine indwelling shunts, and techniques to monitor cerebral blood flow during carotid endarterectomy. This report analyzes results of carotid endarterectomy using regional anesthesia, simple monitoring techniques, and without the routine use of an indwelling shunt.

Materials and Methods

Charts were reviewed from 1975-1978 on 174 consecutive patients who had undergone carotid endarterectomies using regional anesthesia. Twenty patients had bilateral procedures done during this period for a total of 194 carotid endarterectomies studied. During this time, ten procedures were performed using a routine shunt and general anesthesia, either because of the patient's insistence or during concomitant surgery requiring a general anesthetic. Of the 174 patients, 121 (69.5%) were males and 53 (30.4%) were females. Age for males ranged from

52-88 years (average 65.2) and for females 33-79 years (average 63.8). Overall the age range was 33-88 years (average 64.8). The majority of patients had hypertension, arteriosclerotic heart disease, or both. No other consistent major system disease was noted.

Review of a series of 194 consecutive cases of carotid endarterectomies utilizing regional anesthesia revealed an operative mortality of 1.0 per cent and a postoperative permanent stroke rate of 3.1 per cent. These results, combined with the simplicity of the anesthetic and monitoring techniques, support the efficacy of regional anesthesia for performance of most carotid endarterectomies.

All patients were referred by internists. Indications for arteriography in these patients were: (1) cerebral transient ischemic attacks (TIAs), 155 patients (89.1%); (2) previous completed stroke with continuing cerebral transient ischemic symptoms, 12 patients (6.9%); or (3) asymptomatic bruit, 7 patients (4.0%). In patients with cerebral transient ischemic attacks, 136 (88%) had primarily hemispheric symptoms, and 19 (12%) had non-hemispheric symptoms. The patients with asymptomatic bruits were studied by arteriography prior to planned

* General Surgery resident, Wesley Medical Center, Wichita.

† Clinical Associate Professor, Dept. of Surgery, UKSM-Wichita, Wichita, Kansas.

Address reprint requests to Dr. Bosiljevac, Dept. of Surgery, Wesley Medical Center, Wichita, KS 67214.

major surgical procedures that entailed a high risk of hypotension during the procedure. Carotid endarterectomy was advised in these patients for a stenosis > 50 per cent. No neck bruits were heard in 37 of 155 (24%) patients referred with TIAs (20 not recorded), and in 3 of 12 (25%) patients referred with a completed stroke (3 not recorded). All patients received biplane 4-vessel arch angiography.

Premedication was not routinely used in these patients. Cervical block was performed by the anesthesiologist using one per cent lidocaine. Each patient was monitored by continuous electrocardiographic monitoring and continuous arterial blood pressure recording using a radial arterial line. A nurse anesthetist was in attendance during the procedure to monitor vital signs of the patient. Forty per cent oxygen by mask was also administered.

The procedure followed techniques described by Spencer⁴ and Rainer.⁵ Care was taken to minimize manipulation of the vessels as isolation tapes were placed. The carotid sinus was infiltrated using a small amount of local anesthetic. System intravenous heparinization was performed; five minutes after the heparin was administered, the common carotid artery was clamped, and continuous evaluation of an awake patient performed. Any loss of consciousness, slurred speech, visual disturbances, disorientation, or restlessness were perceived as signs of cerebral ischemia and the clamp immediately removed. In these patients indwelling internal carotid artery shunts were used. If the patient tolerated cross clamping of the carotid artery for three minutes the endarterectomy was performed without the use of a shunt. Arteriotomy, endarterectomy, and appropriate back flushing were performed. To avoid narrowing of the arteriotomy, careful closure was done, and a small shunt was used as a stent for the closure of some vessels to avoid compromise of the lumen. Routine operative angiograms were not performed and drainage of the wound was not used.

Postoperatively the patients were monitored continuously using an electrocardiographic oscilloscope and arterial blood pressure monitor in an intensive care unit. Patients recovering without problems were transferred to a routine surgical nursing floor after 24 hours. Hyper- or hypotensive episodes were appropriately treated during the postoperative period.

Results

Transient neurologic deficits resolving in the same hospitalization developed postoperatively in seven patients (3.6%). Permanent neurologic deficits oc-

curred in six patients (3.1%). Two of these completed strokes occurred during mobilization of the carotid artery. Four occurred during the immediate postoperative period, and two of these followed recognized hypotensive episodes. There were two deaths (1.0%), one occurring in a patient following a postoperative hypertensive episode and stroke, and one due to a myocardial infarction during the postoperative period. The combined completed stroke-mortality rate was eight of 194 carotid endarterectomies (4.1%).

Other complications were seen in five patients. These included one wound infection, one postoperative cardiac arrhythmia, two hematomas requiring re-exploration, and one patient who had excision of a painful scar.

Ten patients subsequently had other general surgical or vascular procedures without problems during the same hospitalization. Fifteen patients had bilateral carotid endarterectomies performed during the same admission. Excluding these patients and the patients with completed stroke or death, postoperative hospitalization for the remaining 161 procedures was computed ranging from 2-19 days (average 3.5 days).

Twenty patients (11.5%) underwent bilateral carotid endarterectomies. Fifteen (75%) had bilateral procedures performed during the same hospitalization. The time interval between bilateral procedures in these 15 patients ranged from two to seven days (average 3.9 days). Discharge after the second operation ranged from two to six days (average 3.4 days). There were no completed strokes, deaths, or complications in any of the 20 patients having bilateral operations. One patient experienced a transient neurologic deficit resolved during hospitalization after his second procedure.

A total of 18 indwelling shunts were used in 194 carotid endarterectomies (9.2%). Shunts were determined unnecessary in patients who later developed transient neurologic deficits, completed strokes, or in the operative mortalities. One patient undergoing bilateral endarterectomy required a shunt on his first procedure. Based on admission symptoms, 14 of 136 (10.3%) patients with TIAs and hemispheric symptoms required a shunt. One of 19 (5.2%) patients with TIAs and non-hemispheric symptoms required a shunt. Three of 12 (25%) patients whose surgery followed a completed stroke required a shunt, but none of the patients with asymptomatic bruits had a shunt used. Overall, 18 of 174 patients (10.3%) required a shunt.

Arteriograms in both fatalities demonstrated stenosis greater than 50 per cent and contralateral

occlusion. Four of the patients with completed strokes had unilateral stenosis greater than 50 per cent with ulceration of the plaque; one had stenosis without ulceration; and one had bilateral stenosis greater than 50 per cent. *Table 1* demonstrates shunts used related to the patient's arteriogram.

Discussion

Atheromatous disease of the extracranial carotid vasculature has been clearly implicated in the development of cerebral transient ischemic attacks (TIAs) and stroke. The surgical treatment of TIAs has developed since 1954 when Eastcott⁶ reported on the reconstruction of the internal carotid artery in a patient with intermittent attacks of hemiplegia. The advantages of surgical over medical treatment of carotid artery disease have been documented by Fields.¹ Experience from this report and by others^{2, 7} has indicated that surgical treatment is better than medical treatment in the following groups of patients:

1. Patients with cerebral TIAs and unilateral carotid artery stenosis > 30 per cent.
2. Patients with bilateral carotid artery stenosis and TIAs.
3. Patients with TIAs, stenosis > 30 per cent, and contralateral occlusion.

Patients who have ulcerating plaques in addition to the above lesions experience a stroke rate⁹ or dementia¹⁰ even higher when followed only with medical treatment. According to the most recent report by Fields,⁸ and the experience of Thompson,⁷ surgical results improve if completely occluded vessels are not reopened, both carotid arteries are not operated on simultaneously, the operation is not performed too soon after stroke with fixed neurologic deficits, and carotid endarterectomy is not performed in patients with intracranial disease more severe than extracranial disease.

Patients with asymptomatic bruits and no other risk factors may benefit from carotid endarterectomy. It has been shown that this group is at a high risk to develop stroke.^{11, 12} Prophylactic carotid endarterectomy is particularly useful when these patients are scheduled for another major surgical procedure where they may be at risk for a hypotensive episode. Patients over the age of 65 years with arteriosclerotic heart disease are not good candidates for prophylactic carotid endarterectomy.

Bruits were not heard in all our patients. Overall, a correlation between carotid artery disease and an audible bruit is about 60 per cent.^{11, 13} Bruits may be absent when the stenosis is less than 50 per cent, with total occlusion of the vessel, or with severe, almost complete stenosis. However, patients may still experience TIAs from platelet aggregates or emboli arising from ulcerated plaques without a significant stenosis,^{9, 10} or from atheromatous debris from the plaque itself.

All patients should undergo 4-vessel arteriography in the evaluation for surgery. Views in at least two planes should be obtained or some significant lesions may be missed. The intracerebral circulation should be evaluated on these films. Noninvasive procedures — such as ultrasound,¹⁴ Doppler flow studies,¹⁵ and ocular plethysmography¹⁶ — are being developed for diagnostic use. High accuracy has not been obtained with these tests, although they may aid as screening tests for some patients — particularly in the evaluation of patients with asymptomatic bruits — to decide which patients will require arteriography.

There has been controversy concerning the best anesthetic technique for carotid endarterectomy.¹⁷ Some surgeons have preferred general anesthesia,^{7, 18} arguing that it decreases the metabolic rate of the brain. Others have been satisfied with regional anesthesia.^{5, 19} The advantage of regional anesthesia

TABLE I
INDWELLING CAROTID ARTERY SHUNTS REQUIRED BASED ON PREOPERATIVE ARTERIOGRAM

	No Shunt Used	Shunt	No. in Each Group Requiring Shunt
A. Unilateral stenosis > 50%	73	5	5/78 (6.4%)
B. Bilateral stenosis > 50%	16	2	2/18 (11.1%)
C. Unilateral stenosis > 50% and contralateral occlusion	8	4	4/12 (33.3%)
A. With ulcer	34	3	3/37 (8.1%)
B. With ulcer	14	2	2/16 (12.5%)
C. With ulcer	3	1	1/4 (25%)
A. With moderate intracranial disease	4	2	2/6 (33.3%)

TABLE II
RESULTS OF CAROTID ENDARTERECTOMY

<i>Name and Institution</i>	<i>No. Operations</i>	<i>Mortality</i>	<i>Permanent Strokes</i>	<i>Transient Neurological Deficits</i>	<i>Anesthetic Technique and Use of Shunts</i>
Thompson <i>et al.</i> , ⁷ Baylor University	748	20 (2.7%)	20 (2.7%)	4 (0.5%)	General anesthetic Routine shunt
Hertzer <i>et al.</i> , ²³ Cleveland Clinic	260	3 (1.2%)	5 (1.9%)	7 (2.7%)	General anesthetic Selective shunt
Rainer <i>et al.</i> , ⁵ Denver Clinic	257	2 (0.8%)	2 (0.7%)	7 (2.7%)	Regional anesthetic Selective shunt
Rich <i>et al.</i> , ¹⁹ Walter Reed Army Medical Center	232	6 (2.6%)	5 (2.2%)	7 (3.0%)	Regional anesthetic Shunts only with general anesthetic
Easton <i>et al.</i> , ¹³ Southern Illinois University School of Medicine	228	15 (6.6%)	33 (14.5%)	—	Variable
Proileau <i>et al.</i> , ²³ Medical University of South Carolina	317	10 (3.2%)	34 (10.7%)	—	Variable
Our series	194	2 (1.0%)	6 (3.1%)	7 (3.6%)	Regional anesthetic Selective shunting

is the ease of monitoring cerebral ischemia in an awake patient. The patient's neurologic status can be monitored directly while the common carotid artery is clamped. Under general anesthetic, an indwelling internal carotid artery shunt must be routinely used unless the adequacy of collateral cerebral blood flow is assessed to select patients requiring a shunt. Techniques that have been used are the operative determination of regional cerebral blood flow by isotopic techniques;²⁰ EEG monitoring, which has been shown to correlate well with cerebral blood flow;²¹ or the operative determination of internal carotid artery back pressures.²²⁻²⁴

All of these procedures, and their concomitant equipment and personnel, are unnecessary when carotid endarterectomy is performed under regional anesthesia. An awake patient can be monitored neurologically with a minimum of equipment during the entire procedure. Consciousness and motor movement can be assessed while talking with the patient, or a toy squeaker may be used.²⁵ The results which we have experienced (*Table II*) are comparable to other groups performing carotid endarterectomy under regional anesthesia.^{5, 19} These results compare well with university and clinic groups using general anesthesia and a more complex monitoring routine.^{7, 23} Community hospitals reporting major experience with carotid endarterectomy^{13, 26} have had less satisfactory results. As Hertzer²⁷ points out, patients should be properly selected, and carotid

endarterectomy performed by a well-trained surgeon.

The technical performance of carotid endarterectomy followed procedures described by other surgeons.³⁻⁵ Injection of the carotid sinus to prevent hypotensive episodes, systemic heparinization, careful dissection of the distal intimal plaque, and meticulous closure of the arteriotomy to avoid stenosis have all resulted in improved results. Several major nerves may be injured during the exposure of the bifurcation of the carotid artery.²⁸ A low complication rate should accompany expert operative technique.

When using regional anesthesia, indwelling internal carotid artery shunts are seldom necessary. Changes in consciousness, seizures, visual disturbances, slurring of speech, and even inappropriate restlessness all indicate cerebral ischemia in the awake patient. Sixteen shunts (9.2%) were used in our series. This shunt rate is similar to that reported by Rich,¹⁹ Spielberger,²⁵ and Connolly²⁹ using the same technique, but much less than the rate reported by others^{26, 27} using shunts selectively with general anesthesia and more complex monitoring routines. Thompson³ recommends routine shunts and general anesthesia. Complications associated with the shunt itself include clotting with the shunt, embolization of clots within the shunt, air introduced through the shunt, dissection of a distal internal carotid artery intimal flap or dislodgement of atherosclerotic ma-

terial by insertion of the shunt, the need for a higher incision in the internal carotid artery to place the shunt above the diseased area, and finally the lack of an operative field unobstructed by the shunt.²⁹

Shunts have been recommended to protect the patient from cerebral ischemia during carotid artery cross-clamping. Cerebral ischemia may also result from intra- or postoperative hypotension or severe hypertension, carotid artery thrombosis, or recent cerebral infarction. However, the most frequent cause of intraoperative stroke is the embolization of microemboli, thrombi, or platelet aggregates from the rough surface or ulcer on the plaque or atheromatous debris from the plaque itself.^{9, 10, 30, 31} The placement of a shunt, as well as unnecessary roughness during dissection of the bifurcation of the common carotid artery, may lead to intraoperative embolic focal cerebral ischemia. Hertzner²³ maintains that if embolization at the time of operation is responsible for focal cerebral ischemia, a temporary indwelling shunt decreases the severity of intraoperative stroke by providing perfusion. Patients who undergo carotid endarterectomy shortly after recovering from a documented TIA, or who experience a neurologic deficit during the operation, should have an indwelling shunt placed during the procedure.

Shunts were not associated with an increased rate of strokes or death in our series. Similar results were reported by Hertzner,²³ but Prioleau²⁶ actually found an increased incidence of stroke in shunted patients. Baker³² felt that the incidence of embolic stroke using the shunt probably approached the incidence of ischemic stroke without the shunt, nullifying any advantage the shunt may offer. Internal carotid artery shunts are helpful in preventing cerebral ischemia, but not in preventing *embolic focal cerebral ischemia* which is the most common cause of intraoperative stroke. Routine shunts should be used with general anesthesia, unless intraoperative monitoring of regional cerebral blood flow by EEG or measurement of internal carotid artery back pressure is used to select patients requiring a shunt. If a shunt is not routinely used, regional anesthesia to continuously monitor an awake patient, or one of the other monitoring routines mentioned must be used with general anesthesia.

In order to predict which patients were more likely to require an indwelling shunt, shunt use was related to the patient's admitting symptoms and arteriographic findings. Eighteen (10.3%) of the 174 patients required shunts. Patients with a history of a completed stroke required a shunt more often than the other groups (25%), and patients with TIAs did

not (9.6%). This corresponds to results reported by Hertzner²³ who measured intraoperative internal carotid back pressure in relation to presenting symptoms. As for arteriographic findings, *Table I* indicates that patients with unilateral stenosis > 50 per cent and contralateral occlusion with or without ulceration required an indwelling carotid artery shunt more frequently. This trend was also seen in patients with moderate intracranial disease on the preoperative arteriogram. Both deaths in our series had unilateral stenosis > 50 per cent and contralateral occlusion, but shunts were not required based on intraoperative monitoring. They tolerated the operative procedure well, but subsequently died, one from stroke following a hypotensive episode and one from myocardial infarction in the postoperative period. Thompson³ relates that in his experience patients with such arteriographic findings had the highest mortality rate during carotid endarterectomy. Patients with ulcerating plaques were more likely to suffer stroke in our series. This has been noted by others,^{9, 23, 30} stressing the importance of intraoperative emboli in relation to the occurrence of stroke during carotid endarterectomy. Arteriographic findings do not accurately predict which patients require a shunt. However, shunts may be required more frequently in patients with unilateral stenosis > 50 per cent with or without ulceration and contralateral occlusion, with moderate intracranial disease, or with a history of a completed stroke.

Bilateral carotid endarterectomies were performed in 15 patients (75%) during the same hospitalization. An interval of about four days between the procedures resulted in safe recovery for all patients. Thompson³ feels that bilateral carotid endarterectomies should not be performed at the same time, but can be safely carried out at an interval of one week. Patients undergoing bilateral operations in our series did not experience any morbidity or mortality, nor did they require more frequent use of an indwelling shunt than did the other patients.

Intraoperative arteriography was not used routinely in our series. Some surgeons^{33, 34} promote the value of routine operative arteriograms to assess surgical technique. Anderson³⁵ suggests specific indications are: (1) when difficulty passing the shunt indicates possible intimal injury from the shunt; (2) for evaluation of the distal intima when difficult under direct vision; (3) to evaluate the hemodynamic significance of externally apparent narrowings; and (4) for assessing the result of a technically difficult endarterectomy.

Postoperative care involves careful monitoring of

(Continued on page 652)

Vaginal Voiding

Its Significance in Children

C. H. HSU, M.D., *Topeka*

CYSTOGRAMS and voiding cystourethrograms are particularly important in the workup of children with urinary tract infection. Most urologists perform these tests in their pediatric practice since pathological lesions and vesico-ureteral dysfunction may be detected initially only by these clinical studies.¹⁻⁶ Occasionally, in the evaluation of young females, the vagina may be filled with an opaque medium forming an oval shadow superimposed on that of the bladder; this is referred to as "vaginal voiding." It may be caused by several varieties of lower tract pathology, such as: female hypospadias (shortened or absence); fusion of labia majora; urethrovaginal fistula;⁷ vesicourethrovaginal fistula;⁷ vesicovaginal fistula;⁷ vesicocervical or vesicoureteral fistula; ureterovaginal fistula;⁷ hymenal hypertrophy and folds; or urethral stricture or meatal stenosis.

Sixteen patients between the ages of 3-12 years with recurrent urinary tract infection associated with vaginal voiding were observed at the Topeka Medical Center from October 1976 through October 1978. The following report will present our experience and results with this group of patients.

Materials and Results

Sixteen female patients with a history of recurrent urinary tract infection were investigated. Ages ranged from 3-12 years. The associated symptoms (*Table I*) were low grade fever, sensation of suprapubic pressure, dysuria, frequency, urgency, incontinence, and enuresis. All patients had previously had at least one course of urinary tract therapy — antiseptic or antibiotic. Routine urological workup included infusion intravenous pyelogram, voiding cystourethrogram, urinalysis, urine culture, and sensitivity. The infusion intravenous pyelogram revealed normal upper urinary tracts in all 16 patients. The organisms identified in the urine culture and sensitivity tests (*Table II*) included *E coli*, proteus, and streptococcal group. Ten exhibited no growth on admission but had positive cultures previously. Cystoscopic examination was performed on all 16

patients revealing chronic cystitis with urethral stricture; chronic cystitis with meatal stenosis and urethral stricture; chronic cystitis with meatal stenosis without urethral stricture; and hymenal hypertrophy and folds (*Table III*). Anterior urethral meatotomy with urethral dilatation was noted in seven, and urethral dilatation was noted in the remainder. All 16 patients were discharged with uri-

Vaginal filling during the voiding cystourethrogram may be of pathological significance in children and may be a cause of recurrent urinary tract infection. The proper diagnosis and management of this condition gives good results.

nary antiseptic therapy for a period of four weeks and followed in our Pediatric Urology Clinic at intervals of from four to six weeks. Repeat voiding cystourethrograms were performed from two to ten months following the initial urological procedure.

Results

Sixteen pediatric female patients ranging in age from 3-12 years with recurrent urinary tract infection, had vaginal voiding seen on the voiding cystourethrogram. These patients were treated with anterior meatotomy or periodic urethral dilatation, or both, and followed on a long term urinary antiseptic

(Continued on page 663)

TABLE I

Symptoms	Occurrence
Fever	2
Suprapubic pressure	8
Dysuria	4
Frequency	10
Urinary incontinence	10
Enuresis	7

Total number of patients = 16

Address reprint requests to Dr. Hsu, 918 W. 10th St., Topeka, KS 66604.

Iron Balance

Variations Between Men and Women

G. THOMAS, M.T. and B. VISWANATHAN, M.D., Topeka

IRON HOMEOSTASIS in man is achieved by a delicate interplay between storage iron, transport iron, and tissue iron. In normal males the storage component accounts for 1 gm and in the female it is significantly less, amounting to 300-600 mg; transport iron is 50-150 mcg/dl in both sexes. The bulk of tissue iron in both sexes is contained within circulating red cells as hemoglobin iron. It is well known that iron deficiency is one of the most common deficiencies the world over, and in the United States, females show this more often than males.^{1, 2} It is also known that symptoms of iron deficiency frequently occur before anemia develops and is presumed to be due to lack of iron-containing respiratory enzymes at the tissue level.³

Address reprint requests to Dr. Viswanathan, Memorial Hospital, 600 Madison, Topeka, KS 66607.

We studied a total of 36 subjects, 18 of whom were females who donated blood regularly, and

Iron deficiency is a common occurrence. Serum transferrin saturation and serum ferritin levels were measured in a group of male and female blood donors and non-donors. The results indicate occult iron deficiency in the vast majority of female donors.

compared them with 9 male blood donors and 9 female nonblood donors in regard to iron status.

Materials and Methods

The purpose of the blood tests was explained to all subjects. Each person was questioned as to symptoms of anemia or iron deficiency; namely, las-

TABLE I
FEMALE BLOOD DONORS

Subject	Sex	Age	Symptoms	# Units Donated In Last 2½ Years	HGB (14.0 ± 2) Gm/100 ml	HCT (42 ± 5) /100 ml	Iron (41-132) mcg/dl	TIBC (250-350) mcg/dl	% SAT (30-35)	Ferritin (10-300) ng/ml
1*	F	24	None	8	12.8	38.2	100	404	24.8	17
2*	F	24	Lassitude	8	11.3	33.0	47	465	10.1	4.6
3*	F	24	None	3	12.1	35.8	125	383	32.6	13
4	F	25	None	1	13.6	39.9	168	253	66.4	28
5*	F	28	None	6	14.3	41.9	45	467	9.6	10
6	F	28	None	6	13.7	40.0	46	360	12.8	6
7*	F	29	None	1	14.7	42.3	94	474	19.8	24
8	F	29	None	6	14.2	41.4	48	278	17.2	44
9	F	29	None	4	12.9	37.7	100	198	50.5	51
10	F	29	None	2	14.7	42.5	57	253	22.5	12
11	F	32	None	8	13.8	39.9	54	341	15.8	7
12	F	32	Lassitude	6	12.5	36.4	60	251	23.9	8
13	F	32	None	5	14.0	40.0	60	298	20.1	41
14	F	33	None	4	14.5	42.1	98	211	46.4	10
15	F	40	None	6	13.9	40.8	76	360	21.1	20
16	F	40	None	4	11.4	34.8	41	373	11.0	4
17	F	49	None	8	13.3	38.9	50	353	14.2	10
18	F	50	None	5	14.3	41.5	135	408	33.1	17
Average		32		5	13.4	39.3	78	340	25.1	18.1

Figures in parentheses denote normal values in our laboratory.

* Subject on birth control pills.

TABLE II
MALE BLOOD DONORS & FEMALE CONTROLS

Subject	Sex	Age	Symptoms	# Units Donated	HBG	HCT	Iron	TIBC	% SAT	Ferritin	
				In Last 2½ Years	(16.0 ± 2) Gm/100 ml	(47 ± 5) /100 ml	(41-132) mcg/dl	(250-350) mcg/dl	(30-35)	(10-300) ng/ml	
Male Donors											
1	M	29	None	8	14.2	41.0	74	310	23.9	82	
2	M	29	None	3	16.0	45.5	95	302	31.5	34	
3	M	31	None	4	15.4	44.5	54	324	16.7	49	
4	M	33	None	5	14.9	42.6	87	244	35.6	148	
5	M	35	None	5	17.2	48.8	39	257	15.2	59	
6	M	47	None	3	15.1	42.8	81	258	31.4	63	
7	M	49	None	6	15.4	45.0	93	283	32.9	70	
8	M	55	None	6	14.4	42.1	74	312	23.7	19	
9	M	64	None	5	13.9	40.4	58	271	21.4	36	
Average		41		5	15.2	43.6	72.8	284.5	25.8	62.2	
					(14.0 ± 2) (42 ± 5)						
Female Nondonors											
1	F	21	None	None	14.4	41.2	180	313	57.5	37	
2*	F	21	None	None	12.8	38.8	71	369	19.2	31	
3*	F	26	None	None	13.5	39.5	80	457	17.5	11	
4	F	34	None	None	14.3	41.2	69	315	21.9	10	
5	F	37	None	None	12.4	37.0	48	280	17.1	42	
6	F	37	None	None	14.0	39.6	86	274	31.4	15	
7	F	42	None	None	14.1	41.2	87	281	31.0	83	
8	F	42	None	None	12.8	36.7	57	336	17.0	45	
Average		32			13.5	39.4	84.8	328	26.6	34.3	

Figures in parentheses denote normal values in our laboratory.

* Subject on birth control pills.

situde, dyspnea on exertion, or easy fatigue. Measurements of serum iron and unbound iron binding capacity were made using the principle of chromogen complexing of transferrin iron (American Monitor Corporation). The total iron binding capacity was derived by calculation. Serum ferritin was measured by radioimmunoassay according to the principle of Yalow and Berson.⁴ We used the serum ferritin assay to measure bone marrow iron stores; the correlation has proved fairly accurate, particularly in iron deficiency.⁵⁻⁷ The results were tabulated as shown in *Table I*. The cases noted to be on birth control pills understandably show an increased total iron binding capacity without a correspondingly low serum ferritin.

Discussion

The results of the study reveal that, compared to male blood donors, females show a significantly lower level of serum ferritin, indicating low or absent iron stores. It is also noteworthy that the mean serum ferritin in female nondonors is considerably less than in the males and more than in female donors

(*Table II*). In the female donors, the iron deficiency is undoubtedly due to the added burden of menstrual blood loss, as most of the females studied were premenopausal. Although it has been stated that iron deficiency without anemia is frequently symptomatic, we found on questioning that only 2 of the 18 patients had symptoms, and all were working full time. This emphasized the fact that iron deficiency in the female blood donor can go undetected, and these persons are at risk of developing anemia rapidly should they experience additional blood loss — such as an unusually heavy menstrual flow or other bleeding — or develop infections that can reduce iron uptake by marrow cells.

Conclusion

Due to regular blood loss via the genital tract, premenopausal females who donate blood are in a critical state of iron balance, and anemia can be easily precipitated through conditions of stress or further blood loss. It is important to remember that a significant majority of such iron deficient females

(Continued on page 652)



Current COMMENT

Inheritance of Common Disease

WILLIAM HORTON, M.D.,* *Kansas City, Kansas*

AGGREGATION of many common diseases within families has long been recognized. This clustering has been previously attributed to chance or to the sharing of common environmental factors. It is becoming increasingly evident that genetic factors are important as well. In fact, it may well be that genetic makeup determines which common ordinary diseases an individual suffers during his lifetime. This paper provides a brief overview of the current understanding of the inheritance of common diseases.

Coronary Artery Disease

First degree relatives of coronary patients have a several-fold increased risk of a coronary death. Dietary, smoking, and exercise patterns certainly contribute to this risk, but genetic factors that affect major recognized risk factors — such as hyperlipidemia, hypertension, and diabetes — are probably at least as important. Perhaps 10 per cent of the United States population has some form of hyperlipidemia on a genetic basis. This number rises to 30 per cent when survivors of myocardial infarction before the age of 60 years and their first degree relatives are surveyed, and to 40-80 per cent when considering individuals with coronary disease before the age of 50 years. Seven distinct genetic hyperlipidemias have been identified. They are probably the most common genetic disorders in man and differ in their clinical features, risk of coronary artery dis-

ease, basic defect, inheritance pattern, and potential therapy.¹ Four of these are associated with a high risk of coronary artery disease.

Familial hypercholesterolemia is an autosomal dominant disease that occurs in 0.5 per cent of the normal population. The best understood of the hyperlipidemias, it results from an inherited defect in the cell membrane receptor mechanism responsible for the peripheral uptake of cholesterol bound to low density lipoproteins. This mechanism normally provides the cholesterol needed for membrane synthesis and also regulates *de novo* cholesterol synthesis (once internalized, the cholesterol suppresses the *de novo* pathway) in extrahepatic cells. Because of the abnormality in this disorder, cholesterol synthesis proceeds unchecked and lipoprotein particles accumulate in the blood, both of which contribute to atherosclerosis. Affected persons may have tendinous xanthomas and xanthelasma; cholesterol levels range between 350-500 mg/dl.

Familial combined hyperlipidemia is another autosomal dominant disease. The patients may have elevated cholesterol, triglycerides or both, and often have no physical findings indicative of abnormal lipid metabolism. The disease occurs in 1.5 per cent of the population and is probably due to increased lipoprotein production.

Another genetic form of hyperlipidemia, which is considerably less common than those mentioned above, is familial dysbetalipoproteinemia. It is inherited as an autosomal recessive trait and is due to a metabolic block in lipoprotein catabolism. Normally, the large lipoprotein particles formed in the liver and intestine are delipidated in a stepwise fashion by at least two lipases. These enzymes are activated by specific lipoproteins that are incorporated

* Assistant Professor of Medicine and Pediatrics, UKSM-KC, Kansas City, Kansas.

From the Division of Endocrinology, Metabolism and Genetics, Department of Medicine, UKSM-KC, Kansas City, Kansas.

Address reprint requests to Dr. Horton, UKSM-KC, 39th and Rainbow Blvd., Kansas City, KS 66103.

into the particles. In this disorder, there is a deficiency of one of these — lipoprotein E-III — the co-factor for hepatic triglyceride lipase. The metabolic block results in the accumulation of partially degraded lipoprotein particles (remnants) which are atherogenic.

The most common of the hyperlipidemias is so-called polygenic hypercholesterolemia. Coronary atherosclerosis shows a linear relationship to serum cholesterol levels; individuals with values at the upper limit of normal are at much higher risk than those with cholesterol levels at the lower limit. In addition, when secondary factors that influence cholesterol level are excluded, the distribution within this normal range appears to be determined by the additive effects of many genes (polygenic inheritance). Therefore individuals whose genes dictate that their serum cholesterol will be in the upper 5 per cent of the normal range are said to have polygenic hypercholesterolemia. Although in a strict sense they represent the extreme of normal, they are clearly at increased risk for coronary artery disease.

Thus a predisposition to coronary artery disease can result from many different genetic defects resulting in elevated blood lipids. When such a patient is encountered, other hyperlipidemic relatives are likely to be found as well, and they may be young enough that therapies such as diet, exercise, and drugs can reduce their risk.

Hypertension

A number of studies have shown that blood pressure variability correlates with the degree of consanguinity; the more closely related family members show greater similarity in their blood pressure readings. In fact, it has been estimated that the relative contributions to blood pressure variability are: genetic factors 60 per cent; shared familial environment 4-13 per cent; unshared environment 5-30 per cent; and error — including measurement error and short term temporal variation — 15-40 per cent.² It is likely that many genes contribute to the blood pressure level. Thus, screening of blood relatives of hypertensive patients will likely lead to the identification of other hypertensive individuals within a family.

Diabetes

Diabetes is no longer considered a disease as such, but a syndrome like anemia that can result from many different causes. In some forms genetic factors play a role in the development of the condition.³ For example, inheritance is very important in maturity onset (non-insulinopenic) diabetes. Indeed, in some

families the condition behaves as an autosomal dominant trait. An unusual form of diabetes — termed maturity onset diabetes of the young (MODY) because patients rarely require insulin but develop their disease as youngsters — is definitely an autosomal dominant disorder. In the more common insulinopenic juvenile onset type of diabetes, of which there are probably several forms, susceptibility factors which slightly increase the risk for diabetes appear to be inherited. In these circumstances, the genetic factors act in concert with environmental factors to increase the susceptibility to diabetes and indirectly to coronary artery disease.

Cancer

Cancer is known to run in certain families. Careful evaluation of these families has shown that the clustering is due to a variety of different reasons.⁴ Some cancers appear to result from the mutation of a single gene and are inherited as such; retinoblastoma is an autosomal dominant trait. In other cases a precancerous condition is inherited. For example, in familial polyposis coli — an autosomal dominant disease — polyps throughout the gastrointestinal tract are inherited; virtually 100 per cent of affected individuals develop colon cancer by the age of 40 years. Cancers may occur as components of many inherited disorders. For instance, renal cell carcinoma is a common cause of death in patients with the Von Hippel-Lindau syndrome, an autosomal dominant disorder. The tumor itself is no different than when it occurs sporadically, and in many cases the syndrome is not recognized except in retrospect.

Certain families seem to be cancer-prone; several family members have cancer and the cancers are often different. Two so-called cancer family syndromes have been delineated and each seems to behave as an autosomal dominant trait. In the type I cancer family syndrome, members develop adenocarcinomas of the breast, ovary, endometrium, prostate and colon, whereas in the type II family, breast cancer together with soft tissue sarcomas and embryonal tumors predominate. The prevalence of these cancer family syndromes is not known, but they may be relatively common.

In quite different circumstances, there is also evidence that carriers of certain rare autosomal recessive disorders such as ataxia telangiectasia or the Bloom syndrome, are at increased risk to develop cancer. It should be pointed out that the carrier state is considerably more common than the actual disorders; ataxia telangiectasia occurs in less than 1 in 40,000 births; however, unaffected carriers represent 1 per cent of the population. Several of the

disorders in this category have been shown to involve defects in the repair of injured genetic material. It has been postulated that carriers of these disorders have partial defects in the same mechanisms and, therefore, have an increased susceptibility to environmental carcinogens. Thus, certain people are predisposed to develop cancer and a good family history can often help to identify such individuals. Heritable cancers tend to occur at an earlier age (*e.g.* colon cancer at age 30) and are frequently multifocal in origin, as in bilateral breast cancer or bilateral renal cell carcinoma.

Peptic Ulcer Disease

There is now strong evidence that peptic ulcer disease is inherited at least to some extent.⁵ Relatives of duodenal ulcer patients have a three-fold greater incidence of duodenal ulcer than the normal population, and the same holds true for gastric ulcer; but the two tend not to occur in the same families. Two reasons for this clustering have recently been ferreted out. In some families the predisposition to peptic ulcer is thought to be due to increased production of pepsinogen I, which is inherited as an autosomal dominant trait. In other families rapid gastric emptying is inherited as the predisposing factor. The magnitude of gastrin response to protein ingestion may be under genetic control as well, and an inherited exaggerated response might predispose some individuals to the disease.

Connective Tissue Disorders

Several so-called collagen diseases — such as ankylosing spondylitis, lupus erythematosus, polymyalgia rheumatica, psoriatic and rheumatoid arthritis — are known to occur in families. In some situations, it appears that susceptibility factors are inherited.⁶ For example, the specific histocompatibility antigen designated HLA-B27 is found in most patients with ankylosing spondylitis or Reiter's syndrome, and it (or some factor related to it) is thought to predispose to the disease. The human leukocyte antigens (HLA) are the products of the major histocompatibility genes, which are located on chromosome number 6; they are inherited in dominant fashion. Thus a predisposition to ankylosing spondylitis is inherited. Other genes located near the HLA area on chromosome number 6 are thought to be responsible for increased susceptibility to others of these disorders.

Major Psychoses

Both schizophrenia and manic depressive psychosis aggregate in families. For a variety of reasons

it has been difficult to delineate the inheritance of the syndromes. However, extensive studies utilizing twins reared apart and offspring of affected parents raised by unaffected foster parents have shown that genetic factors are important in the causation of both conditions.⁷ Moreover, they seem to be separate; schizophrenia appears in certain families, manic depressive psychosis in others, without crossover. Both conditions show polygenic inheritance. However, genetic heterogeneity — as was noted in hyperlipidemia and cancer — will likely be found.

Discussion

Genetic factors are important in the development not only of rare diseases, but of many common diseases as well. In some cases the disease results from a single mutant gene and the inheritance follows traditional Mendelian or single gene patterns, *e.g.* autosomal dominant, recessive, and so forth. In the majority of cases, however, it is an increased susceptibility to the disease that is inherited. This predisposition may result from a single mutant gene or from the additive effects of several genes. In either case, environmental factors are important in converting the genetic predisposition into clinical disease and consequently usually only a small percentage of susceptible persons actually have the disease.

In the current medical milieu where considerable emphasis is placed on preventive medicine, the recognition and understanding of genetic predisposition to common diseases becomes very important. High risk groups for coronary artery disease, peptic ulcer disease, cancer, and a variety of other diseases can be identified simply because the particular disease has occurred in other family members. Accordingly, screening programs and preventive measures should be aimed especially at these groups. For example, lipid screening would have its highest yield in relatives of patients with premature coronary artery disease, in contrast to families in which it never occurred. Similarly, cancer screening in families where two or more members have cancer may well identify additional cases at an early stage when curative therapy might be possible. Avoidance of cigarette smoking, low fat diets, exercise and other measures thought to reduce the risk of coronary atherosclerosis would be expected to offer the greatest benefit to relatives of coronary patients.

In essence, the concept of genetic predisposition provides the physician with a new tool with which to deal with common diseases. It also means that all of us need to take the family history more seriously, and not allow it to become an easily passed-over part of the patient's initial (and subsequent) visits.

Self-Assessment Questions

True or False

1. Genetic heterogeneity occurs in hyperlipidemias.
2. Screening first degree relatives of patients with inherited hyperlipidemia will detect *few* cases of asymptomatic lipid disorders.
3. Heritable cancers present no differently than sporadic ones.
4. Familial aggregation of a disease means that it is inherited.
5. Genetic predisposition increases the risk of developing a common disorder such as coronary artery disease.

(Answers on page 663)

References

1. Horton, W. A.: Genes, lipids and coronary artery disease. *Continuing Education* 11:86-93, 1979.
2. Miall, W. E.: Genetic considerations concerning hypertension. *NY Acad. Sci.* 304:18-25, 1978.
3. Anderson, C. E.; Rotter, J. I. and Zonana, J.: Hereditary considerations in common disorders. *Pediatr. Clin. North Am.* 25:539-559, 1978.
4. Schimke, R. N.: *Genetics and Cancer in Man*. Edinburgh, Churchill-Livingstone, 1978.
5. Rotter, J. I. *et al.*: Duodenal ulcer disease associated with elevated pepsinogen, I. An inherited autosomal dominant disorder. *N. Engl. J. Med.* 300:63-66, 1979.
6. Horton, W. A.: Heritable connective tissue disorders. In *Clinical Genetics* (Jackson, L. J. and Schimke, R. N., eds.). New York, Wiley Press, p. 229-244, 1979.
7. Stabenau, J. R.: Genetic and other factors in schizophrenic, manic-depressive and schizo-affective psychoses. *J. Nerv. Ment. Dis.* 164:149-167, 1977.

A Neglected Modality

(Continued from page 645)

the cardiovascular as well as neurologic status of the patient. Hypotension and extreme hypertension must be avoided. Blood pressure problems appeared to correlate with strokes and death in our patients more frequently than any other factor.

Summary

Our results indicate that regional anesthesia without routine use of internal carotid artery shunts can provide a safe method for performance of carotid endarterectomy. Neurologic evaluation of an awake patient is an accurate means for identification of patients requiring an indwelling shunt. Careful attention to selection of patients and adherence to strict operative technique should improve results. Use of regional anesthesia allows the majority of patients to be discharged from the hospital within days following surgery. Furthermore, when stable, most patients can undergo other major surgical procedures safely a few days after carotid endarterectomy.

References

References may be obtained from the authors.

Iron Balance

(Continued from page 648)

are asymptomatic. It seems reasonable to provide supplemental iron to such patients so that they may continue to donate blood without risk to themselves.

References

1. Williams, W. J.; Beutler, E.; Erslev and Rundles, R. W.: *Hematology*, 2nd ed. New York, McGraw-Hill Publishing Co., p. 367, 1977.
2. Scott, D. E. and Pritchard, J. A.: Iron deficiency in healthy young college women. *JAMA* 199:147-150, 1958.
3. Fielding, J.; O'Shaughnessy, M. C. and Brunström, G. M.: Iron deficiency without anemia. *Lancet* 2:9-12, 1965.
4. Yalow, R. S. and Berson, S. A.: *Principles of Competitive Protein Binding Assays*, Chapter 1 (Odell, W. D. and Doughaday, W. H. eds.). Philadelphia, J. B. Lippincott and Co., 1971.
5. Ali, M. A. M.; Luxton, A. W. and Walker, W. H. C.: Serum ferritin concentration and bone marrow iron stores — A prospective study. *Can. Med. Assoc. J.* 118:945-946, 1978.
6. Kalmin, N. D.; Robson, E. B. and Bettigole, R. E.: Serum ferritin and marrow iron stores. *NY State J. Med.* 78:1052-1055, 1978.
7. Seelig, C. B. and Case, Jr., C. C.: Review of the clinical usefulness of the serum ferritin determination. *J. Maine Med. Assoc.* 68:364-365, 1977.



The President's Message

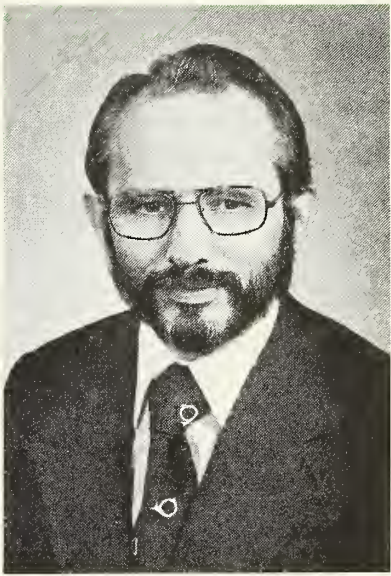
On Humility

As a physician you have a right to be proud. You have a right to be proud of your education, profession, the many scientific achievements of the medical world, and your position in society. As a matter of fact, without considerable self-pride, it is difficult to be your best as a physician. Pride — in one's ability and in one's achievements — is an essential attribute of an effective professional.

But in my opinion, the emphasis on pride and self-assertiveness has been slightly overemphasized recently, for we seem to have overlooked the virtue of humility in the process.

By humility I mean the ability to be humble about one's position in life. And to be humble about one's accomplishments and achievements.

Too often, I see physicians taking credit for saving someone's life, or making the blind to see and the lame to walk, and indeed taking credit for the healing process itself. Although I do not wish to denigrate the accomplishments of the medical profession, I do think it is important at this time of year to remember that healing is more than pills, treatment, and surgery. Indeed, we should remember that healing is basically a divine process, and we as physicians can only contribute. During this season of the year especially, it would be well for each of us to remember the humble beginning of the baby in the manger and to somehow emulate that humility in our contacts with others. True greatness is not possible without humility.



The Kansas Medical Society officers and staff wish each of you a Merry Christmas and successful New Year!

Faternally

Donald D. Gering, MD
President





Editorial COMMENT

Another Epistle

(With apologies to Karshish, peripatetic physician of Araby, his friend, R. Browning, late of Westminster Abbey, and sundry anthologists and publishers who, having lived off them these many years, will probably be the ones to take umbrage at our disclosure of the following newly-discovered manuscript.)

Karshish, wanderer in divers lands,
Seeking truth as God reveals in healing,
Acquisitor of ways beyond our ken
Of bringing noisome humors to accord,
To Abib, foe of Death and curator
Of all the ancient wisdom of our art.

Once more, the scribe sends greetings, not without
Deep qualms thou may think thy student mad,
For can thy all-pervading intellect
Accept these strange accounts as very truth?
Forgive my doubt and let me share my tale
(Or fantasy — I scarce know which myself),

Thou mark'st my last report from Bethany —
My discourse on one Lazarus, a Jew
Who, though thought dead, awoke but in
A seeming different world — he saw
As through another's eyes — the rabbi who
Raised him up, a stranger in his time.
I ponder that case still but let me tell
Of matters that have mystified me more.

'Twas after this then, with my soul replenished,
I left Jerusalem and made my way
League on league, foot, beast, and sail, westward
To this exotic land from which I write —
Atlantis, think you? Nay, it seems not — yet
No fabled land of yore could claim such marvels.
These people stand in form like unto us
Though many-hued are they and warm of feeling.
The women go all places and unveiled,
But such is counted no affront to God.

Hair is abundant, dress is of one form —
Bepanted all — but for close-shirted bosom,
'Twould seem a land of men and beardless boys.
They go about in iron carts propelled
By some encag-ed beast with thunderous roars,
Expelling all the while black flatulence
That stifles breath and burneth eyes and nose.
Of sustenance, a plenty but scant choice —
If it be not the native dish called *burger*,
Then dismembered fowl in glutenous wrap,
Or yet — in truth, description plays the beggar —
A viscous glomeration called *pizzah*.
It matters not, for as they eat, they slump
Entranced before a strangely lighted window
And gaze as motley crews of zealots cry
The sinfulness of smell and unwhite wash.
I fathom not these ways but yet I find
One lesson over all the traveler learns —
Take food at will but do not drink the water.
One pleasing note: their numbers mimic ours.
To our astronomers, they know their debt,
But truth to tell, on learning whence I come,
They agitate and cry, "Opec, opec!" —
I say an oddment, dost thou not agree?
Of their language, I can but despair.
But two nights since, as I did make my way
Unto my hostelry for rest, and sought
The peace and gentle solace of *tabak*,
I bade my host he should procure a *hookah*,
But what he brought me thou wouldst not believe.

I know my words must seem but vagrant victims
Of my distraction in this baffling life
And fail to tell the things you wish to learn
Of their pursuits of healing's mysteries.
So hear me now — great temples they build up
To house their ill ones and pursue their art,
And all therein have many shrines and chambers
In which strange rituals work their healing ways.

Scant heed they seem to give the sick ones.
 Instead, they gaze through windows luminant
 At giddy trails of small green snakes and maggots
 By whose cavorting they do seek to know
 The sick one's darkest secrets as they scheme
 To bring the flesh and mind to health again.
 With vapor's soft consent and scalpel's act,
 They penetrate to body's hidden sites.
 The wondrous things they do thereby remove
 Amaze no more than those they do put in.
 And elsewhere, Chemie's nectars aid God's healing.
 The pestilence, they say, doth scarce exist
 (Though pox and gleet still lurk in darkling lair —
 And see, Abib, as God's hand eases healing,
 Ungrateful man takes license to his ways!)
 Of fevers, flux, and boils, they do profess
 Small beasties be the cause — 'tis strange you say?
 No more than that they claim to overcome them
 By dint of molds drawn from the very soil!
 Of lying-in, no doubt exists of wonders:
 With fever in the bed all but unknown,
 Full many women bear, live, bear again
 In soporific's ease of labor's dolor
 (Though some do shun this ease, claim exaltation —
 Like unto that of penance, think you not?)
 Babes thrive nor yet succumb to childhood terrors,
 And thus in time survival is compounded,
 And burgeoning hordes are covering the land.
 The ancients, too, defer life's termination
 And sit and rock and ponder — to what end?
 Custom's stringent law permits no egress
 But in God's time — (However *that* be reckoned).
 I note, too, Sage, that here, as in our land,
 Are many who think God speaks but to them.
 But stay — I would say more though in the saying
 I bait thy anger as I strain belief.
 Say you, my words are blasphemy as God
 Intended such cures as these but for His own?
 Consider thuswise: Also in this land
 Are many forms of rule, though they proclaim
 No man abides here but can count him free
 And those who rule do so just by his will,
 Yet many councils and tribunals sit
 Who take their laws and say what they shall mean,
 And doing so, make justice do their whims!
 What matters this, you ask, to those whose days
 Are joyous in pursuit of this, our art?
 Just this: Let healer's efforts prove in vain
 Nor yet All-Heal's caprice elect to fail,
 For then is brought the healer into court

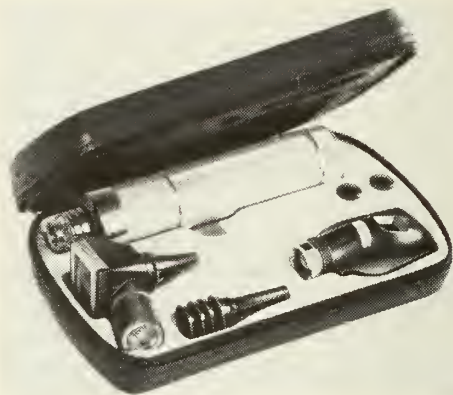
And there must make amends with gold galore.
 If each should set a value on his efforts
 Like unto that which colleagues set on theirs,
 This cannot be, the ruling council sayeth —
 It doth, they say, effect restraint of trade.
 (Markest thou, a *trade* they call our art.)
 And yet another sayeth, if they seek
 A just and fitting compense for their care,
 Like fees must be and must apply to all —
 Requiring yet the very thing denied.
 Physicians with tradition's vital power
 Set, you think, those laws by which they act,
 The ethos which sustains them as they serve?
 Then these tribunes will count such thoughts suspect,
 Claim they alone can guide the righteous act.
 (What said I but just this moment past
 Of those who think that God speaks but to them?)
 Still others say that healing's cost is folly
 And must give way to systems yet untried —
 Or worse, already tried and failed.
 Canst tell me, Master, by what devious thought
 These victories over Death or grievous ills
 Should be regarded cause for castigation?
 How can the fruitful act debase the actor?
 Can that which needeth faith yet long survive
 When those who bringeth hope shall be denied?

But here I mark my close — I send this forth
 By their great silver bird — they say
 'Twill reach you in but two suns' passing.
 If I believe what I have seen, why not that, too?
 But I? I move on and trace the sun.
 They say that I — both foot and mind — have
 touched
 But yet the outer edge of this strange land.
 Nor am I drawn more by healing's wonders
 Than by the strange disquiet they bring forth.
 Thinkst thou not if we had such for ours,
 Great content would surely overly us?
 And yet, it is not so with those who have it,
 And it does seem, Abib, we must prepare
 For things of which we now do want no part.
 Much as I long to greet thee once again
 And rest and ponder all I've seen and learned,
 There's always something lying just beyond.
 I go to seek the final answer there.
 Perhaps 'tis this that Lazarus has seen.

Salaam. — D.E.G.

WELCH ALLYN DIAGNOSTIC SET

One of the many WELCH ALLYN sets we stock in Kansas City backed by complete in-store factory authorized repair department. Discounts to students, residents and interns. Visit our show-room for demonstration.



The GOETZE-NIEMER Co.

1701 Brooklyn, K.C., MO. 816-231-1900
serving the Midwest since 1884

★
Specialized Service

PROFESSIONAL ^{IN} LIABILITY INSURANCE

is a high mark of distinction

Since 1899

1912

MEDICAL PROTECTIVE COMPANY

FORT WAYNE, INDIANA

KANSAS CITY OFFICE:

Robert E. McCurdy, Representative

Suite 202-A, 6600 West 95th Street, Overland Park, Kansas

P.O. Box 6101, Leawood, Kansas 66206

Telephone: (Area Code 913) 381-4222

The Journal of the KANSAS MEDICAL SOCIETY

INDEX TO VOLUME LXXX

JANUARY 1979, TO DECEMBER 1979, INCLUSIVE

Published Monthly by
THE KANSAS MEDICAL SOCIETY

AUTHORS

Abdou, Nabih I.	141	Elmets, Craig	332
Adamson, Harold W.	323	Farha, George J.	490
Ahmed, Iftekar	554	Farha, Jim	641
Asher, Marc	403	Ferris, Bruce G.	485
Barat, Kenneth	605	Fixley, Mark S.	22
Barnhorst, Donald A.	256	Francis, Anthony E.	49, 260
Behbehani, Abbas M.	600	Gandhi, Shantikumar K.	20
Bena, James H.	418	Gerber, Allen	499
Bhaskar, G.	422	Ghani, A.	20
Bigongiari, Lawrence	336	Gish, Gareth B.	135
Bonam, Sara	343	Glazzard, Peggy	161
Bosiljevac, J. E.	251, 272, 641	Godfrey, Robert	141
Boyles, Jane E.	336	Goertz, Kenneth K.	126
Briscoe, Karen	113	Gonzalez-Pardo, Lillian	146, 161
Brooks, William H.	327	Grantham, Jared J.	122
Bustamante, Sergio	499	Greathouse, Judith	122
Cairns, Mary	113	Guillan, Ramon A.	547, 555
Carroll, Diana	503	Harris, James	403
Center, Melvin	341	Harrison, Harold L.	138
Chang, Frederic C.	490	Hartman, Gerald V.	54
Cho, Sechin	494	Hermreck, Arlo S.	122
Chonko, Arnold M.	122	Hinthorn, Daniel R.	332, 504
Cole, Denise Brannan	150	Hollowell, Joseph G.	343
Comstock, Christine	336	Holmes, Grace E.	150
Consigli, Richard C.	341	Holmsten, R. David	18
Couchonnal, Guillermo	425	Horbelt, Douglas V.	323
Cox, Terry A.	414	Horton, William	649
Cross, Donald E.	122	Hsu, C. H.	646
Crouch, Steven W.	420	Huaman, Antonio	609
Cuppge, Francis E.	555	Kendall, Tommy E.	485
Davidson, Kendrick C.	327	Kestenbaum, Thelda	288
Day, R. O.	155	Kim, A.	558
deBakker, Jan	269	King, Charles R.	105
Diederich, Dennis A.	122	Kirk, E. David	57
Downs, Jeannette L.	150	Kirz, Paul H.	543
Dunn, Marvin	11	Kittleson, A. C.	336
Dyck, George	481	Klopovich, Patricia	113
		Krier, David	550

Kroll, Harry G.	267
Kyner, Joseph L.	560
Lansky, Shirley B.	113
Lee, Yong U.	285
Leiberman, Bruce	403
Lessard, G. E.	478
Lin, Joe J.	49, 260
Lindsley, Carol B.	119
Lindsley, Herbert B.	141, 155
Linshaw, Michael A.	138
Liu, Chien	332, 425
Lorch, Vichien	503
Lukert, Barbara P.	345
Mani, Mani M.	550
Mansfield, Carl M.	54
Marsh, H. O.	49, 260, 543
Martin, Helen Kingston	343
Martin, Norman L.	597
Marvin, Norman G.	130
Mathewson, Hugh S.	135
Mattioli, Leone	119, 126
McCoy, Sally	161
Mebust, Winston K.	122
Meyers, Agnes	503
Mireau, Evelyn	503
Mirza, Medo	285, 499
Moore, Wayne	420
Morantz, Robert	403
Murphy, Jay W.	11
Nagesh, K. G.	422
Nelson, Gerald D.	485
Nelson, Russell A.	503
Nowlin, Nancy S.	409
O'Connell, Kathleen A.	130
Olson, Joyce	403
Organ, Alan E.	146
Pennington, Katherine	494
Petty, Marjorie	343
Pierce, George E.	122
Pike, J.	558
Pollak, Erich W.	15, 605
Poole, Bernard T.	543
Porter, Robert D.	555
Poulose, K. P.	422
Preston, David F.	597
Rau, G. M.	422, 558
Reddy, Eashwer K.	54
Reddy, P. J.	419
Roberts, Daniel K.	323
Robinson, Ralph G.	597
Rosen, David	113
Saliou-Diallo, G. I.	558
Savin, Virginia J.	122, 612
Schloesser, Patricia T.	343
Shaw, Richard C.	485
Skerker, Leonard B.	336
Smith, Stephen D.	113
Stechschulte, Daniel	141
Stehman, Frederick B.	143
Stephens, Ronald L.	62
Stewart, David R.	143, 279
Stone, Henry	417
Street, David E.	264
Sturgeon, Janet K.	113
Taliaferro, Betty	150
Taiyam, A. K.	247
Thomas, G.	647
Thomas, George H.	494
Thomas, James H.	122
Threatt, Barbara	336
Thurston, David E.	267
Trueworthy, Robert	113
Turner, John J.	20
Van Houden, Charles E.	269
Vath, Kay	146
Vats, Tribhawan S.	113
Ventura, Orlando	422
Villarante, Fe	18
Visser, Phillip A.	279
Viswanathan, B.	423, 647
Voth, Douglas	409
Walker, Timothy A.	15
Walsh, Richard A.	475
Ward, Howard N.	436
Weigel, John	403
Whitney, Wallace	403
Windle, Rick	264, 285
Wongsurawat, Nirandon	18, 419, 555
Wongsurawat, Vance	419, 555
Yang, Chi-Ping	60, 547

INDEX TO SUBJECT MATTER

Allergy and immunology:	
persistent severe eosinophilia	423
possible mild reaction to erythromycin ethyl succinate, with challenge	418
rheumatology traineeship for the practicing physician	141
American College of Surgeons issue:	
acne vulgaris	288
light microscopy: histologic analysis of normal and diseased osteons	260
morbid obesity: gastric bypass	269
pancreatic/duodenal trauma: the use of serosal patch	247
partial splenectomy: case report of a six-year-old male	285
pulmonary sequestration: diagnosis and management	279
soft tissue injuries: use of arthrograms to determine ligament injury to the ankle	267
spastic ileus	251
termination of the physician-patient relationship	291
total parenteral nutrition: guidelines for utilization of intralipid and peripheral veins	272
two-man corporations	293
ulcerative colitis: operative experiences in the elderly	264
valvular heart surgery	256
American Medical Association:	
actions of the house of delegates	577
Anesthesiology:	
local anesthesia for carotid occlusive disease	641
mechanical ventilation: new requirements and refinements	135
Blood and lymphatics system:	
fatal yersinia enterocolitica septicemia in a compromised host	558
hydrops fetalis: a review of seven cases	503
iron balance: variations between men and women	647
persistent severe eosinophilia	423
reduction mammoplasty: autologous blood and two-team approach	485
Waldenström's macroglobulinemia: pleuropulmonary manifestations	57
Cardiovascular system:	
angina, hemodynamic factors determining the medical management of	11
bacterial endocarditis: mitral valve prolapse syndrome	60
bronchogenic carcinoma with cardiac metastasis	422
cardiorespiratory syndrome: manifestations in children with chronic upper airway obstruction	126
infective endocarditis: recognizing its present appearance and avoiding errors in management	504
local anesthesia for carotid occlusive disease	641
malignant hypertension	612
myocardial abscess mimicking acute ischemic myocardial infarct	555
paradoxical embolism: the shunt detected by non-invasive method	18
patent ductus arteriosus: surgical ligation in premature infants with respiratory distress syndrome	499
pericarditis: an initial manifestation of juvenile rheumatoid arthritis	119
salt restriction for the treatment of mild hypertension	555
sudden death syndrome: reports of 16 patients on high doses of phenothiazine	547
thrombectomy: acutely occluded aorto-coronary saphenous vein bypass graft	20
valvular heart surgery	256
Case reports:	
basal ganglia calcification: an effect of long-term phenothiazine therapy	554
bronchogenic carcinoma with cardiac metastasis	422
fatal yersinia enterocolitica septicemia in a compromised host	558
hypophosphatemia associated coma following treatment of diabetic coma	419
malignant teratoma in undescended testicle	419
myocardial abscess mimicking acute ischemic myocardial infarct	555
persistent severe eosinophilia	423
possible mild reaction to erythromycin ethyl succinate, with challenge	418
salt restriction for the treatment of mild hypertension	555
vitamin D deficiency rickets	420
Current Comment:	
acne vulgaris	288
acute urethritis: diagnosis and management	425
breast cancer management	62
bronchodilator therapy	22
infective endocarditis: recognizing its present appearances and avoiding errors in management	504
inflammatory arthritis, rational use of aspirin and nonsteroidal anti-inflammatory drugs in	155
inheritance of common disease	649
malignant hypertension	612
Paget's disease of bone	345
when is a diabetic?	560
Dermatology:	
acne vulgaris	288
thermal injuries: assessment and treatment for out-patient care	550
Endocrine system:	
estrogen receptors in breast carcinoma	609
when is a diabetic?	560
Endocrinology:	
when is a diabetic?	560
Family practice:	
medication regimens, improving adherence to	130
rheumatology traineeship for the practicing physician	141

Gastrointestinal system:	
bowel preparations: a comparative study	490
morbid obesity: gastric bypass	269
non-ruptured subcapsular liver hematoma during pregnancy and puerperium	15
pancreatic/duodenal trauma: the use of serosal patch	247
partial splenectomy: case report of a six-year-old male	285
spastic ileus	251
ulcerative colitis: operative experiences in the elderly	264
Genetics:	
familial exostosis	543
inheritance of common disease	649
myelomeningocele patient, the	403
obstetrical genetics: techniques for improving perinatal care	105
PKU and hypothyroidism	343
Sanfilippo syndrome: a case report of mucopolysaccharidosis III A	494
slow-virus diseases	600
Internal medicine:	
angina, hemodynamic factors determining medical management of	11
bacterial endocarditis: mitral valve prolapse syndrome	60
basic clerkship: students in internal medicine on a community clinical campus	409
brain tuberculoma: diagnosis and treatment	332
bronchodilator therapy	22
bronchogenic carcinoma with cardiac metastasis	422
cardiorespiratory syndrome: manifestations in children with chronic upper airway obstruction	126
fatal yersinia enterocolitica septicemia in a compromised host	558
fibrinogen uptake test: critique of its clinical value	605
hypophosphatemia associated coma following treatment of diabetic coma	419
infective endocarditis: recognizing its present appearances and avoiding errors in management	504
inflammatory arthritis, rational use of aspirin and nonsteroidal anti-inflammatory drugs in	155
iron balance: variations between men and women	647
malignant hypertension	612
mechanical ventilation: new requirements and refinements	135
medications regimens, improving adherence to	130
myelomeningocele patient, the	403
myocardial abscess mimicking acute ischemic myocardial infarct	555
non-ruptured subcapsular liver hematoma during pregnancy and puerperium	15
Paget's disease: intense calvarial localization of gallium-67	597
Paget's disease of bone	345
pancreatic/duodenal trauma: the use of serosal patch	247
paradoxical embolism: the shunt detected by non-invasive method	18
partial splenectomy: case report of a six-year-old male	285
pericarditis: an initial manifestation of juvenile rheumatoid arthritis	119
pulmonary sequestration: diagnosis and management	279
rheumatology traineeship for the practicing physician	141
salt restriction for the treatment of mild hypertension	555
slow-virus diseases	600
spastic ileus	251
sudden death syndrome: reports of 16 patients on high doses of phenothiazine	547
thoracic aortography: the evaluation of mediastinal masses	327
thrombectomy: acutely occluded aorto-coronary saphenous vein bypass graft	20
total parenteral nutrition: guidelines of intralipid and peripheral veins	272
ulcerative colitis: operative experiences in the elderly	264
Waldenström's macroglobulinemia: pleuropulmonary manifestations when is a diabetic?	57
560	
Kansas Medical Society:	
annual session	356
council meeting minutes	306, 378, 567
house of delegates, report of	359
long range planning session	297
resolutions	367
KUMC:	
issue (see University of Kansas School of Medicine — Kansas City issue)	
Wichita Branch issue (see University of Kansas School of Medicine — Wichita issue)	
Medical education:	
basic clerkship: students in internal medicine on a community clinical campus	409
medical school, the: present and future	475
Musculo-skeletal system:	
familial exostosis	543
Fourier/Dirichlet: modeling of bone ultrastructural surfaces	49
inflammatory arthritis, rational use of aspirin and nonsteroidal anti-inflammatory drugs in	155
light microscopy: histologic analysis of normal and diseased osteons	260
myelomeningocele patient, the	403
Paget's disease: intense calvarial localization of gallium-67	597
Paget's disease of bone	345
pericarditis: an initial manifestation of juvenile rheumatoid arthritis	119
vitamin D deficiency rickets	420
Nervous system:	
basal ganglia calcification: an effect of long-term phenothiazine therapy	554
brain tuberculoma: diagnosis and treatment	332
hypophosphatemia associated coma following treatment of diabetic coma	419
local anesthesia for carotid occlusive disease	641
myelomeningocele patient, the	403
Paget's disease: intense calvarial localization of gallium-67	597
rebound nystagmus: an adult with Dandy-Walker syndrome	414
slow-virus diseases	600
sudden death syndrome: reports of 16 patients on high doses of phenothiazine	547
Neurology:	
basal ganglia calcification: an effect of long-term phenothiazine therapy	554
brain tuberculoma: diagnosis and treatment	332
local anesthesia for carotid occlusive disease	641
myelomeningocele patient, the	403
neural tube defects: seasonal and regional variations in Kansas	146
rebound nystagmus: an adult with Dandy-Walker syndrome	414
slow-virus diseases	600
Obstetrics and gynecology:	
breast cancer management	62
Dalkon Shield — insertion, perforation, and migration	323
hydrops fetalis: a review of seven cases	503
mammography, dependent compression	336
non-ruptured subcapsular liver hematoma during pregnancy and puerperium	15
obstetrical genetics: techniques for improving perinatal care	105
risk birth registry: results of a pilot study in Kansas	150
Oncology:	
bladder cancer: the role of radiation therapy	54
breast cancer management	62
bronchogenic carcinoma with cardiac metastasis	422
cancer, recent advances in the treatment of children with	113
do viruses cause human cancer?	341
estrogen receptors in breast carcinoma	609
malignant teratoma in undescended testicle	419
RNA tumor viruses	417
Ophthalmology:	
rebound nystagmus: an adult with Dandy-Walker syndrome	414
Orthopedics:	
familial exostosis	543
Fourier/Dirichlet: modeling of bone ultrastructural surfaces	49
light microscopy: histologic analysis of normal and diseased osteons	260
myelomeningocele patient, the	403
Paget's disease of bone	345
soft tissue injuries: use of arthrograms to determine ligament injury to the ankle	267
vitamin D deficiency rickets	420
Pathology and laboratory medicine:	
estrogen receptors in breast carcinoma	609
Fourier/Dirichlet: modeling of bone ultrastructural surfaces	49
light microscopy: histologic analysis of normal and diseased osteons	260
persistent severe eosinophilia	423
RNA tumor viruses	417
slow-virus diseases	600
Pediatrics:	
acne vulgaris	288
cancer, recent advances in the treatment of children with	113
cardiorespiratory syndrome: manifestations in children with chronic upper airway obstruction	126
hydrops fetalis: a review of seven cases	503
neural tube defects: seasonal and regional variations in Kansas	146
PKU and hypothyroidism	343
P.L. 94-142: implications for physicians	161
partial splenectomy: case report of a six-year-old male	285
patent ductus arteriosus: surgical ligation in premature infants with respiratory distress syndrome	499
pediatric breast disease: a review of diagnostic criteria	143
pediatric nephrology	138
pericarditis: an initial manifestation of juvenile rheumatoid arthritis	119
possible mild reaction to erythromycin ethyl succinate, with challenge	418
pulmonary sequestration: diagnosis and management	279
risk birth registry: results of a pilot study in Kansas	150
Sanfilippo syndrome: a case report of mucopolysaccharidosis III A	494
slow-virus diseases	600
vaginal voiding: its significance in children	646
vitamin D deficiency rickets	420
Pharmacology, therapeutics, and toxicology:	
basal ganglia calcification: an effect of long-term phenothiazine therapy	554
breast cancer management	62
estrogen receptors in breast carcinoma	609
hydrops fetalis: a review of seven cases	503
inflammatory arthritis, rational use of aspirin and nonsteroidal anti-inflammatory drugs in	155
medication regimens, improving adherence to	130
sudden death syndrome: reports of 16 patients on high doses of phenothiazine	547
Psychiatry and psychology:	
community maintenance: a program for chronic mental patients	481
sudden death syndrome: reports of 16 patients on high doses of phenothiazine	547
Public health:	
do viruses cause human cancer?	341

PKU and hypothyroidism	343	cardiorespiratory syndrome: manifestations in children with chronic upper	126
risk birth registry: results of a pilot study in Kansas	150	airway obstruction	126
Radiology:		inflammatory arthritis, rational use of aspirin and nonsteroidal anti-	155
bladder cancer: the role of radiation therapy	54	inflammatory drugs in	160
mammography, dependent compression	336	insuring honesty in your practice	135
Paget's disease: intense calvarial localization of gallium-67	597	mechanical ventilation: new requirements and refinements	130
soft tissue injuries: use of arthrograms to determine ligament injury to the	267	medication regimens, improving adherence to	146
ankle	327	neural tube defects: seasonal and regional variations in Kansas	105
thoracic aortography: the evaluation of mediastinal masses	327	obstetrical genetics: techniques for improving perinatal care	161
Reproductive system:		P.L. 94-142: implications for physicians	143
Dalkon Shield — insertion, perforation, and migration	323	pediatric breast disease: a review of diagnostic criteria	138
hydrops fetalis: a review of seven cases	503	pediatric nephrology	119
inheritance of common disease	649	pericarditis: an initial manifestation of juvenile rheumatoid arthritis	122
malignant teratoma in undescended testicle	419	renal transplantation	141
non-ruptured subcapsular liver hematoma during pregnancy and puer-	15	rheumatology traineeship for the practicing physician	150
perium	105	risk birth registry: results of a pilot study in Kansas	490
obstetrical genetics: techniques for improving perinatal care	105	University of Kansas School of Medicine — Wichita issue:	481
Respiratory system:		bowel preparations: a comparative study	511
bronchodilator therapy	22	community maintenance: a program for chronic mental patients	503
bronchogenic carcinoma with cardiac metastasis	422	corporate disability	504
cardiorespiratory syndrome: manifestations in children with chronic upper	126	hydrops fetalis: a review of seven cases	475
airway obstruction	135	infective endocarditis: recognizing its present appearances and avoiding	499
mechanical ventilation: new requirements and refinements	499	errors in management	485
patent ductus arteriosus: surgical ligation in premature infants with respi-	418	medical school, the: present and future	478
ratory distress syndrome	279	patent ductus arteriosus: surgical ligation in premature infants with respi-	494
possible mild reaction to erythromycin ethyl succinate, with challenge	327	ratory distress syndrome	509
pulmonary sequestration: diagnosis and management	57	reduction mammoplasty: autologous blood and two-team approach	425
thoracic aortography: the evaluation of mediastinal masses	478	rural practice among graduating medical students in Kansas, preference for	54
Waldenström's macroglobulinemia: pleuropulmonary manifestations	288	Sanfilippo syndrome: a case report of mucopolysaccharidosis III A	138
Rural medicine:	605	telephone answering solutions	122
rural practice among graduating medical students in Kansas, preference for	336	Urinary system:	646
Skin and appendages:	143	acute urthritis: diagnosis and management	425
acne vulgaris	485	bladder cancer: the role of radiation therapy	54
fibrinogen uptake test: critique of its clinical value	550	bladder cancer: the role of radiation therapy	419
mammography, dependent compression	26	malignant teratoma in undescended testicle	138
pediatric breast disease: a review of diagnostic criteria	481	pediatric nephrology	122
reduction mammoplasty: autologous blood and two-team approach	511	renal transplantation	646
thermal injuries: assessment and treatment for out-patient care	66	vaginal voiding: its significance in children	425
Socio-economic medicine and health care delivery:	160	Urology:	54
chicken tracks	67	acute urthritis: diagnosis and management	419
community maintenance: a program for chronic mental patients	429	bladder cancer: the role of radiation therapy	138
corporate disability	349	malignant teratoma in undescended testicle	122
insurance claims, tips on submitting health	130	pediatric nephrology	646
insuring honesty in your practice	161	renal transplantation	425
legal and tax trends: leasing your employees?	436	vaginal voiding: its significance in children	54
medical collections	509	What Price Melancholy?	352
medical office manual, the	291		
medication regimens, improving adherence to	293		
P.L. 94-142: implications for physicians	146		
professional medical advertising	414		
telephone answering solutions	499		
termination of the physician-patient relationship	143		
two-man corporations	485		
Special senses:	293		
neural tube defects: seasonal and regional variations in Kansas	146		
rebound nystagmus: an adult with Dandy-Walker syndrome	414		
Surgery:			
bowel preparations: a comparative study	490		
breast cancer management	62		
fibrinogen uptake test: critique of its clinical value	605		
light anesthesia: histologic analysis of normal and diseased osteons	260		
local anesthesia for carotid occlusive disease	641		
morbid obesity: gastric bypass	269		
pancreatic/duodenal trauma: the use of serosal patch	247		
partial splenectomy: case report of a six-year-old male	285		
patent ductus arteriosus: surgical ligation in premature infants with respi-	499		
ratory distress syndrome	143		
pediatric breast disease: a review of diagnostic criteria	279		
pulmonary sequestration: diagnosis and management	485		
reduction mammoplasty: autologous blood and two-team approach	418		
renal transplantation	122		
soft tissue injuries: use of arthrograms to determine ligament injury to the	267		
ankle	251		
spastic ileus	550		
thermal injuries: assessment and treatment for out-patient care	20		
thrombectomy: acutely occluded aorto-coronary saphenous vein bypass	272		
graft	264		
total parenteral nutrition: guidelines for utilization of intralipid and	256		
peripheral veins	113		
ulcerative colitis: operative experiences in the elderly			
valvular heart surgery			
University of Kansas School of Medicine — Kansas City issue:			
cancer, recent advances in the treatment of children with			

EDITORIALS

Addendum	513
Another Epistle	654
Deus ex machina — sometimes	564
Face in the Crowd	617
"Let there be truth —"	69
Outlook: Look Out	295
Pay Attention	166
Stuff of Politics, The	432
Uncommon Code, The	28
What Price Melancholy?	352

DEATHS

Alonso, Rene A.	619
Basham, John H.	516
Bowman, Harold	619
Brown, Harwin J.	168
Claiborne, Richard H., III	516
Eddy, Murray C.	516
Grael, Truman W.	168
Hawkey, Alfred S.	517
Henneberger, Charles E.	566
Huff, John D.	566
Johnson, Joseph H.	620
Kaelson, Paul A., Jr.	72
Koeneke, Irene	517
Marr, James	168
McCreight, Eugene J.	620
Podrebarac, Leonard F.	72
Pratt, W. L.	517
Purves, Robert K.	168
Rombold, Charles R.	72
Summerville, Ward W.	72
Tice, Galen M.	620
West, Ray A.	72
Williams, Gene V.	517



Tagamet®

brand of

cimetidine

How Supplied:

Pale green 300 mg. tablets
in bottles of 100 and Single Unit Packages of 100
(intended for institutional use only).

Injection, 300 mg./2 ml.,
in single-dose vials
and in 8 ml. multiple-dose vials,
both in packages of 10.

SK&F LAB CO.
a SmithKline company

IT'S HIGHLY RECOMMENDED... AND FOR GOOD REASONS



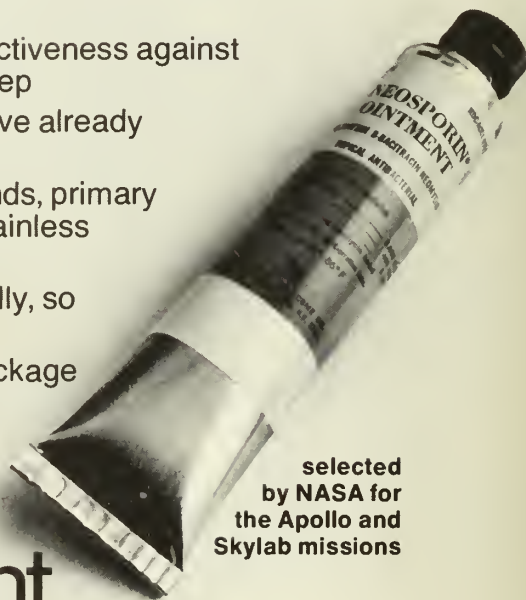
Polymyxin B

Neomycin

Bacitracin

Gram-negative
Pseudomonas
Hemophilus
Klebsiella
Aerobacter
Escherichia
Proteus
Gram-positive
Corynebacterium
Staphylococcus
Streptococcus
Pneumococcus

1. provides broad-spectrum, overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep
2. helps prevent topical infections, and treats those that have already started
3. it's good medicine for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses; and it's painless and cosmetically pleasing
4. contains three antibiotics that are rarely used systemically, so the risk of sensitization is minimal
5. you can recommend it in any of the three convenient package sizes: 1 oz tube, 1/2 oz tube, or the versatile, single-use foil packet



selected
by NASA for
the Apollo and
Skylab missions

NEOSPORIN® Ointment

(polymyxin B-bacitracin-neomycin)

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs, in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations,

prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Ka M P A C

KANSAS MEDICAL POLITICAL ACTION COMMITTEE

1300 TOPEKA AVE.

• TOPEKA, KANSAS 66612

Dear Doctor:

"In America any boy may become President and I suppose it's just one of the risks he takes." — Adlai Stevenson

A matter involving more risk and no humor is the way the medical profession is being made a scapegoat by the federal government. We are a political football and will be kicked around a great deal during the coming months.

It is time to fight the huge bureaucratic propaganda campaign that threatens to tarnish the professional image. To do this effectively will require a strong response.

YOU are important in this effort. KaMPAC is an effective structure, and with strong membership support it can play a significant role in safeguarding our professional ideals.

Sincerely,

Ronald Davis, M.D.
Chairman



Our FULL SERVICE BANKTM offers you more than a checking and savings account. We are medically oriented and offer a full range of services designed just for you, Doctor.

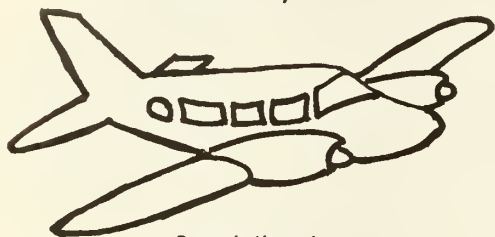
AT CENTRAL BANK & TRUST,
WE'VE GOT IT ALL!

- Leasing • IRA • Lock Box
- KEOGH (HR10)
- Safe Deposit Boxes
- Money Market Certificates
- Certificates of Deposits
- Trust Department
- International Banking
- And More...



Main Bank / 3433 E. Central • Central Two
First and Hillside • Central Northwest
21st and Amidon • All locations: 316-686-7111
Wichita, Kansas 67201 • Member F.D.I.C.

Allen County Aviation, Inc.



Specialists in

Stabilized Patient Transfers

in

Single and Multi Engine Aircraft

includes

Nursing • Suction • Oxygen

for quotes between

Continental United States Cities

Call Collect: (316) 365-6783

(Our aircraft provide sufficient room for patient, two persons and crew.)

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal
Supports

Elastic
Hosiery

Foot
Supports

Surgical
Corsets



Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.

1009 McGee St.

VI 2-4750

KANSAS CITY, MO.

HUAMAN PATHOLOGY LABORATORY TOPEKA KANSAS

Antonio Huaman, M.D., Director

Complete services and consultation for Anatomic, Oncologic, Forensic, and Radioisotopic Pathology and Cytology for physicians' offices and hospitals.

Direct inquiries to:

Antonio Huaman, M.D.
Continental Medical Building, Suite B-20A
631 S.W. Horne Street — P.O. Box 1774
Topeka, KS 66606
Phone (913) 233 3566

Vaginal Voiding

(Continued from page 646)

TABLE II

Organism	Occurrence
Escherichia coli	4
Proteus group	1
Others (streptococcus, etc.)	1
No growth	10

Total number of patients = 16

TABLE III

Diagnosis	Occurrence
Chronic cystitis with urethral stricture	7
Chronic cystitis and meatal stenosis with urethral stricture	4
Chronic cystitis and meatal stenosis without urethral stricture	2
Hymenal hypertrophy and folds	3

Total number of patients = 16

therapy depending upon the results of the urinary culture and sensitivity findings. Vaginal voiding disappeared and symptoms subsided after a period of the above therapy.

References

1. Burge, R. G.: Delay cystograms in children. *J. Urol.* 70:729, 1953.
2. Davis, L. A.; Lich, R.; Howerton, L. and Joule, W.: The lower tract in infants and children. *J. Urol.* 75:151, 1956.
3. St. Martin, E. C.; Campbell, J. H. and Pesquiev, C. M.: Cystography in children. *J. Urol.* 75:151, 1956.
4. Stewart, C. M.: Delay cystography and voiding cystourethrogram. *J. Urol.* 74:749, 1955.
5. Thornbury, J. R. and Immergut, M. A.: Polyview voiding cystourethrogram in children. *Am. J. Roentgenol. Radium Ther. Nucl. Med.* 95:475, 1965.
6. Waterhouse, K.: Voiding cystourethrogram: A simple technique. *J. Urol.* 85:103, 1961.
7. Valk, W. L. and Foret, J. D.: The problem of vesicovaginal fistula and ureterovaginal fistula. *Med. Clin. North Am.* 43:1769, 1959.

**USE YOUR MEDICAL
LIBRARIES**

**YOUR LIBRARIAN WILL BE
HAPPY TO ASSIST YOU**

Inheritance of Common Disease

(Continued from page 652)

Answers

1. *True.* Genetic heterogeneity means that several different genetic mutations can result in the same clinical picture, *i.e.*, four different inherited hyperlipidemias result in the accumulation of atherogenic lipoproteins and increase the likelihood of coronary artery disease.
2. *False.* Screening of this group will likely identify many affected asymptomatic persons.
3. *False.* Heritable cancers tend to occur earlier and be multifocal in origin but the malignant potential is usually the same.
4. *False.* Aggregation can be due to chance or to sharing of common environmental factors as well as sharing of common genes.
5. *True.* The concepts of genetic disease and genetic predisposition differ. In the former, the genetic mutation is such that it produces disease in any environment. In the latter, the mutation is such that disease can be produced only under specific environmental conditions. Hence, the predisposition is inherited, but only those individuals exposed to the specific conditions develop actual disease. The traditional genetic diseases — such as inborn errors of metabolism and malformation syndromes — fall into the first category, whereas common diseases tend to fall into the second.

**"We've got the
remedy"**

If you are considering a change, consider the Air Force Medical Service. The benefits include:

- An excellent salary
- 30 days of paid vacation each year
- The rank and prestige of an Air Force Officer
- Full Air Force benefits for yourself and your family

You'll have none of the overhead expenses because we take over the management and administrative tasks you must now perform.

We have more information regarding physician appointments in the Air Force Medical Service. We'll be happy to share the information with you.



Contact:

Capt. Don Townner, Citadel Bldg.,
1734 E. 63rd St., Kansas City, Mo.
Ph. 816-926-5424

Air Force. A great way of life.

INDEX TO ADVERTISERS

Allen County Aviation, Inc.	662
Burroughs Wellcome Company	660b
Capitol Federal Savings & Loan Ass'n	664
Central Bank & Trust	661
Goetze-Niemer Company	656
P. W. Hanicke Manufacturing Company	662
Huaman Pathology Laboratory	662
Kansas City Southwest Clinical Society	636
Kansas Gold & Silver Exchange	640
Eli Lilly and Company	635
Mead-Johnson Pharmaceutical Division	636a, 636b
Medical Protective Company	656
Merck Sharp & Dohme	640
Mid-America Computing	638
Munns Medical Supply Company	638
Roche Laboratories	634, C3, C4
Smith Kline Diagnostics	639
Smith Kline & French	660a
U. S. Air Force	663

WANTED: Director of Community Health, City of Wichita. Must possess or be eligible for Kansas licensure to practice medicine. Base salary \$24,921-\$57,307 plus exceptional fringe benefits package. Inquiries and detailed resume to: Tim M. Kohl, Personnel Director, City of Wichita, City Hall, 455 No. Main, 2nd Floor, Wichita, KS 67202. Phone 316-268-4531.

HLA TESTING for disease association studies; HLA B-27, HLA B-8, etc. Available from the Midwest Organ Bank Laboratories. For information call 816-931-6353 or contact Midwest Organ Bank Laboratories, 305 W. 43rd St., Kansas City, MO 64111.

FOR SALE: Mimeograph machine in good working order. Also sound-scriber equipment — 2 recorders, 1 transcriber, working order. Best offer. Contact the Kansas Medical Society, 1300 Topeka Avenue, Topeka, KS 66612, or call (913) 235-2383.

Doctor, here are 100% deductible retirement plans!

You can now save up to \$7,500 per year or 15% of earned income (whichever is less) in a KEOGH RETIREMENT PLAN at Capitol Federal earning up to 8.00% per year and deduct the entire amount from your taxable income • Even the interest earned is tax-sheltered until withdrawn during retirement, beginning as early as age 59½ • Or you may use the similar IRA PLAN contributing up to \$1,500 per year or 15% of earned income (whichever is less) • You may also use our Pre-Authorized Payment System to make your deposits automatic • Let us help you set up your retirement plan now with FSLIC insurance to \$100,000 on IRA and KEOGH accounts.

DIRECTOR DR. JAMES A. McCLURE

Capitol Federal Savings

• TOPEKA • JOHNSON COUNTY
• OLATHE • EMPORIA • SALINA
• LAWRENCE • MANHATTAN

"The Most Trusted Name In Savings"

54

357188

